THE

FARMER'S MAGAZINE:

DECEMBER, 1809.

(No. XL.)

BRANCH I.

ORIGINAL COMMUNICATIONS.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Letter from Dr Coventry.

SIR,

THE copy of a lease inserted in the Farmer's Magazine (Vol. IX. p. 182.), was drawn up for an estate in the south of Scotland, in the letting of which I had some concern. I beg leave, however, to mention, that I never considered that lease to be free of imperfections, or at all calculated to serve for arable farms in general. From having found a place in your respectable publication, it has attracted some notice, and excited some discussions, which, on the whole, I do not conceive can have any injurious effect, either to the proprietor of the estate alluded to, or to the public, as all are interested in the improvement of husbandry.

In drawing up the articles of a lease, one must consult the wishes both of landlords and tenants, their mutual prejudices and partialities, and their dread of loss from new or untried regulations, which a little looseness in language may allow the address of lawyers to abuse or render abortive. To show, however, that our Scotish leases are improving, I enclose 'Articles of Lease,' by which several farms on some extensive estates in the north of Scotland have been lately let; though still many circumstances concur to render the improvements in the lease too limited, and greatly short of bringing it to perfection. I trust I shall have it in my power, ere long, to submit another copy of articles, in which

there is more precision, and fewer restrictions on the tenant; for I could point out sundry amendments, which the situation of the estates alluded to, notwithstanding the highly commendable liberality of the proprietors, did not warrant my introducing.

Before I close this note, I beg leave to assure you, that the nobleman who is the proprietor of the estate in the south of Scotland, for which the lease inserted in the Magazine was drawn up, is extremely desirous to promote improvements in agriculture, and ready to give every liberty in the application of the lands and use of their produce, that any discreet person would reckon fairly consistent with the interest of his property. Notwithstanding some obscure insinuations, by one writer, about the prosperity of the tenants on that estate, produced, perhaps, by the situation of a very few of them, I have occasion to know that it is in a thriving condition, or in a state of progressive improvement, and that pretty rapidly; and that, by the late arrangement of the farms, not more than eight families, out of a rent-roll of above two hundred tenants, left the estate; but that there were dismissed, as useless or unnecessary for its tillage, (greatly more perfect of late than formerly), at least two hundred horses, and this even without the substitution of oxen,—which last, I conceive, were they discreetly introduced, would add to the improvements in that district.

I have the honour to be, with great respect and esteem,

Sir, your most obedient servant,

Edinburgh, 2. *Aug.* 1809. A. COVENTRY.

NOTE BY CONDUCTOR.

WE are highly obliged to our worthy friend Dr Coventry, for the above sensible and interesting communication, and also for the 'Articles of Lease' which follow. We have not leisure, at this time, to say more, than that we cannot consider the 'Articles' as any thing like perfect, particularly those which regard rent, and the mode of cropping to be practised. Agriculture is a living science; therefore constantly varying in its practices, and incapable of being accurately regulated during the whole period of a lease, by any agreement at its commencement. In short, while we have not the slightest objection against proprietors taking every fair means to obtain high rents, we are decidedly of opinion, that the management of the tenant should be left free and unrestrained, except in the four last years of the lease, when his interest may take a different direction from that of the proprietor. The tenant's management may then, with some propriety, be controuled; as the farm might otherwise be thrown out of shape, and the interest of the proprietor considerably affected. N.

Arti-

Articles of Lease between a Landlord and his Tenants.

I. THAT the lands are to be let for the term of years, with entry at next, to the tenants and their heirs, whether of line or by appointment, but without division among heirs-portioners, and excluding the benefit of collation to executors; and a stocking of cattle and corn sufficient for the land must always be bequeathed to the heir along with the tack. Legal or conventional assignation or subsetting to be excluded, except on the following conditions:—

1. That they shall not exercise this power during any of the first three years of the lease, nor until they shall have done something considerable for the improvement of the grounds, by cleaning with a fallow, or else a horse-hoed crop, and also manuring a due proportion of them, that is, not less than one sixth part of the usually arable lands in each year, for three successive years immediately preceding the time at which the subset or assignation is to take effect.

2. That they shall not diminish the extent of the possession by dividing it among subtenants, but shall, if they exercise the above power, be obliged to subset the whole possession, or assign the whole lease to one individual person; and always under the conditions, restrictions, and whole obligations contained in the original tack, and particularly under this condition, that the farm shall not be left understocked upon any such change of the possessor, and that the grantor of such assignation or subset shall remain bound to the landlord after the same shall take place.

3. That the subset or assignation shall not be granted for any shorter period than the whole term of the lease to run thereafter. And,

4. That the tenant shall not be entitled to subset or assign, without first making an offer of surrendering his lease to his landlord, on receiving such consideration as they may agree upon; and in case of their differing thereanent, the sum at which it shall be offered to the landlord shall be fixed by the arbitration of neutral men, mutually chosen, with power to name an oversman; and, if they differ about an oversman, he is to be named by the Judge-ordinary. If the tenant refuses to concur in naming valuators, they are to be appointed as afterwards directed.

II. The lease is also to be granted under the following reservations and restrictions, viz.

1. Reserving to the proprietor all minerals, metals, coal, peat, marl, limestone, and quarries of all kinds, with power to him, or those authorised by him, to search for, work and win, all or any of these, in any part of the lands, and to carry them off at

any time; and also to make roads, aqueducts and levels, and to erect houses and machinery, when and where he may judge requisite for such purposes; the tenant being always allowed deduction from his rent, or otherwise paid, for any surface-damage done to the grounds, and loss occasioned to him, by any of these operations, as the same shall be ascertained by two neutral persons of skill, to be mutually chosen.

2. Reserving full power to make or alter roads through the lands, and also to straighten marches and exchange lands, either with any of the neighbouring proprietors, or with any of his other tenants; and the annual value of the ground taken away, or thrown into the farm, by these means, after being ascertained by two neutral men, to be chosen as above, shall be deducted from, or added to the rent.

3. Reserving power to form or repair march-fences, and, at any time during the first years of the lease, to make such subdivision-fences as the proprietor shall judge proper, providing the lands so to be enclosed shall not be of less extent than ten acres in each field or enclosure; the tenant being always bound to pay, in addition to his rent, at the rate of 6 *per cent.* on the cost thereof, in manner after specified, *i. e.* such additional rent or interest on the cost of the march-fences, commencing from the time that the fence is formed or repaired, so as to be rendered fencible for cattle, and on the cost of enclosing each field from the time it is made fencible for cattle, and to be paid yearly and termly thereafter along with the rent.

4. Reserving right to cut and carry away growing timber; and also, at any time during the currency of the lease, to assume possession of any part or parts of the lands which the proprietor shall choose, for being planted with trees, or for building houses, or for other purposes, provided the ground so taken shall not exceed acres; and the tenant shall be entitled to a deduction from his rent for the land so resumed, according as the same shall be settled by neutral men, to be mutually chosen; the proprietor being bound to enclose, at his own expense, the land so planted, and the tenant being bound and obliged thereafter to take care of, and pay one half of the cost of repairing such additional fences. The proprietor also reserves right to plant rows of single trees along the fences or boundings of the different fields, which he is to fence or secure, in a sufficient manner, with timber, to be renewed every fifth year, if necessary; and the tenant is bound to protect them and keep them in repair during the intermediate period; and likewise right to plant trees in the hedge-rows, the trees there and hedges being protected by the tenant.

5. Reserving all fish and game on the farm, with the sole right of

of fishing, fowling, and hunting, by himself, his gamekeepers, or others having his authority in writing; but always so as not to injure the land, fences, or any sown or planted crop, and being liable to make recompense for the same, at the arbitration of two neutral men mutually chosen.

6. Reserving power, if at any time the houses, fences, gates and drains on the farm shall be found in disrepair, to cause the same to be put in proper order, and to charge the tenant with the expense thereof, unless he (the tenant) shall execute such repairs within one month after being required so to do by a notice in writing.

III. The tack shall contain a clause of absolute warrandice by the proprietor, under the above conditions and reservations.

IV. The obligations by the tenant shall be to the following effect.

1. He shall become bound for payment of the stipulated rent, half of which is to be a fixed money rent, and the other half is the ascertained value of a certain quantity of wheat, barley and oats, or two of these, payable by the fiar prices, according to the average of the eight preceding years, for each of the first two years, and of the ten preceding years for each of the subsequent years' rents under the lease. This rent is to be paid to the proprietor, or his factor, at two terms in the year, Candlemas and Lammas. At the first of these terms the money rent shall be paid, with interest and penalty in case of failure, in common form, during the currency: And, in like manner, the part of the rent payable by the fiars' prices of victual shall be paid at Lammas, with interest and penalty, in common form. The last year's rent he shall be bound either to pay one month before his removal from the farm; or to find, one month before his removal, satisfactory security for payment thereof within six months after his term of removal, with interest and penalty in case of failure, as above.

2. The rents offered by intending tenants, which must be made in writing, are understood to be for the lands or farms to which they respectively refer, with the subsisting accommodations as to the houses and fences, open drains and water courses; but the landlord will expend a reasonable sum, afterwards to be settled between himself and intended tenants, on such repairs, and such additional houses and fences, as may be agreed on by them to be requisite for the possession, on the condition that the tenant shall engage to pay, of increased rent (rent higher than that contained in the original offer), at the rate of 6 *per cent.* on the landlord's outlay on such new or improved accommodations, and that half-yearly, along with his said rent, at the terms above specified,

commencing the payment of said additional rent at the first term after such buildings are completed, and the expense thereof ascertained. He is also to furnish and deliver yearly, between Christmas and Candlemas, a certain proportion of the whole victual stipend payable for the said lands to the minister of the parish of ; but to be allowed out of his rent, for the quantity of victual so delivered, a sum according to the fiars' prices of that crop; also to pay one half of the school salary payable to the schoolmaster of the said parish, without deduction; and likewise to perform all the services to the high and parish roads, exigible for the said farm annually, or to pay the conversion of the same when due, without allowance; and to perform his proportion of the carriages necessary for the building or repairing of the church, manse and offices, school, or schoolmaster's house.

3. Respecting the mode of culture, cropping, &c. these conditions to be inserted, viz.

The said obliges himself and his foresaids, that they shall adopt and observe, during the currency of the lease, the following mode of culture and cropping the said lands, viz. They shall not have, at one time, more than one half of the whole arable, and usually tilled lands, under a white crop, such as wheat, rye, barley, or oats; and, in no case, shall take more than two of such crops in close succession from the same ground, or without the intervention of a grass or herbage crop, or else a hoed crop of turnips, potatoes, or any other such hoed crop as may suit the situation, or else a summer fallow; which hoed crop, or fallow, shall be properly tilled and manured: And shall not have, during the last four years of the lease, two white or corn crops in close succession,—but only one such, alternately, with an herbage or a hoed crop, or a summer fallow, in his the tenant's option: And that, in regard to the management of the farm towards the end of the lease, they shall cultivate, properly, the following proportion of the usually tilled land, in the following manner, viz. In the third year before its termination, they shall cultivate, and have not less than one sixth part of these lands under a summer fallow, or some of the hoed crops before mentioned; and shall give then this said proportion full tillage, and a due supply of dung or putrescent manure: And, in the second year, shall have this sixth part under corn; and, along with such crop, shall furnish and sow in proper seeds for hay or pasture; which part shall not, afterwards, be ploughed or broken up by them: And they shall leave, at their removal, that grass crop to the landlord or incoming tenant, who shall pay for the same, at the arbitration of neutral men mutually chosen. As also, they shall have in the second year before the end of the lease, not less

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than another ſixth part in ſummer fallow, or under a horſe hoed crop, to be properly dreſſed by tilling and manuring as above; which ſixth part ſhall be under corn, in the laſt year of the leaſe; and, along with this crop, graſs or herbage ſeeds, of a proper aſſortment and quality, ſhall be procured and ſown by the tenant, unleſs the proprietor ſhall give three months notice to the tenant, that he is himſelf to furniſh and ſow in the herbage ſeeds; and, in either caſe, the tenant ſhall properly harrow or cover in the ſame: But for the graſs or herbage ſeeds, ſown by the tenant in the laſt year, he ſhall be paid by the proprietor, or incoming tenant, at the arbitration of neutral men to be mutually choſen. And further, in the laſt year of the leaſe, they ſhall give one ploughing before Candlemas, to another ſixth part, for which ploughing they ſhall be paid at the rate of eight ſhillings Sterling per acre; and ſhall leave the land for fallow, or hoed crop, to the landlord or incoming tenant; but, for the ſame, they ſhall have deduction out of their laſt year's rent, at the rate of one ſixth thereof, if the farm ſhall be wholly arable; it being underſtood that the lands ſo left ſhall not be inferior in quality to the average value of the arable, or uſually tilled lands, on the farm; or, in the caſe of farms not wholly arable, at ſuch a rate, per acre, of abatement, as ſhall be ſettled by men mutually choſen by the parties; it being hereby declared, that the ſixth part, ſo ploughed and left in fallow, ſhall be of entire or cloſe fields. And further, the proprietor ſhall have right, without recompenſe, to ſow graſs ſeeds with all, or any, of the other white crops, in the laſt year of the leaſe; the tenant, and his foreſaids, being bound to harrow, or cover them in properly. And, further, the landlord ſhall have the option of purchaſing, at the arbitration of neutral men, mutually choſen, the corn and ſtraw of the laſt crop and year, on giving notice of this intention before the firſt of Auguſt, and becoming bound to pay its price, or account for it at the term of Martinmas following: And the ſaid tenant obliges himſelf, and his foreſaids, during the whole currency of the leaſe, to manage the farm in a proper huſbandman-like manner, for the mutual advantage of all parties; and, in order duly to ſuſtain its productiveneſs, not to ſell, or ſend from it, ſtraw, hay, turnips, potatoes, or any other ſpecies of produce, excepting corn, without obtaining previouſly the conſent of the proprietor, and being liable to produce, if required, ſatisfactory evidence, that he has elſewhere procured in lieu thereof, and has expended on the lands, in that, or the two preceding years, manure fully equivalent to what the articles ſo diſpoſed of would afford. It is alſo expreſsly ſtipulated and agreed to, that if the tenant ſhall depart from the regulations before ſpecified, as to the treatment and application of the lands, he and his foreſaids, in

that caſe, are bound hereby to pay the ſum of 10l. Sterling of additional rent for each acre treated or cropped differently from the mode before mentioned; which additional rent ſhall not be conſidered as penal, but as pactional; and which the ſaid hereby obliges himſelf and his foreſaids to pay to the ſaid and his foreſaids, at the ſame terms with the original rent of the year or years in which ſuch alteration takes place, with the like intereſt and penalty in caſe of failure: And for the purpoſe of aſcertaining the fact of any deviations being made in the before ſtipulated plan of culture and cropping, and the amount of the additional rent thereby due, the parties oblige themſelves to enter into a ſubmiſſion, within three months after the one ſhall be required in writing to do ſo by the other, to two neutral men mutually choſen; and the determination of ſuch arbiters ſhall be final. And the ſaid obliges himſelf and his foreſaids to leave the whole manure that ſhall be on the farm at the time of his removal; one half of the value of which, as the ſame ſhall be aſcertained by neutral men, the proprietor ſhall be bound to pay to the outgoing tenant.

4. The tack to have the following clauſes, viz.

Further, it is hereby declared, that if the tenant or ſubtenant, then in poſſeſſion of the farm, ſhall become bankrupt, or ſhall execute any truſt conveyance of his property for behoof of creditors, then, and in that caſe, this leaſe ſhall, at the option of the proprietor, be null and void, unleſs the tenant ſhall, within forty days after he is required by a notice in writing ſo to do, execute an aſſignation or ſubtack, or, if the proprietor chuſe, ſhall renounce to him for ſuch value as ſhall be aſcertained by arbiters mutually choſen. Moreover, the ſaid obliges himſelf and his foreſaids to furniſh the carriages of the whole materials that may be laid out on building or repairs on the premiſes, on being paid for the ſame at the arbitration of neutral men mutually choſen; and to maintain in good tenantable or habitable condition, and in proper repair, during the currency of the leaſe, the whole houſes, drains, or water-courſes, fences, and gates, on the ſaid farm, and to leave them in a proper ſtate of repair at his removal; or at leaſt, to keep and leave at his removal, all and each of the accommodations as to houſes, fences, gates, drains and water courſes on the ſaid farm, in equally good repair and condition as he ſhall receive them in at his entry thereto, or as they ſhall be in at any period during the currency of this leaſe; it being always underſtood that the whole of ſuch accommodations are in good and tenantable repair and condition, unleſs the contrary ſhall be ſpecially declared by a writing ſigned by the parties, and

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that the proprietor ſhall pay his proportion of the expenſe of maintaining ſuch fences as are required for new plantations, or lands reſumed as above mentioned; and alſo, the tenant to protect the trees planted or to be planted on the lands; and, failing his doing ſo, to indemnify the proprietor for any damage incurred by his fault or neglect, at the arbitration of neutral men; and likewiſe to repay to the proprietor all ſuch expenſes as he may have laid out, in virtue of the reſerved power before mentioned, in repairing ſuch houſes, drains or water courſes, fences and gates, and that from time to time as the ſame ſhall be incurred, on production of the tradeſmen or workmen's accounts or receipts, without further proof.

V. The tack may contain a clauſe reſpecting arbitration in the following terms.—" And in regard that, by this tack, ſeveral references are made to arbiters to be mutually choſen, and that inconvenience may ariſe from either of the parties refuſing or delaying to name an arbiter, or that ſuch arbiters may differ in opinion as to the matters referred to them; therefore, it is hereby ſpecially provided and agreed to by the parties, that in all caſes in which any difference ſhall ariſe, and about which it is hereby covenanted, reference ſhall be made to arbiters mutually choſen; then, and ſo often as ſuch event may occur, the parties bind and oblige themſelves to each other, that they ſhall enter into and ſubſcribe a regular, valid, and formal ſubmiſſion to arbiters, to be mutually choſen by them, with power to the arbiters to name an overſman, containing all clauſes uſual and neceſſary for rendering the ſaid ſubmiſſion and decreet-arbitral to follow thereon effectual; and in the event that either of them or their foreſaids ſhall refuſe or delay to name an arbiter on his part, for determining anent any of the matters herein contained which are made the ſubject of arbitration, within one month after being required in writing by the other party ſo to do, or that the parties ſhall not agree as to the arbiters, it ſhall be competent for either party to apply by petition to the Sheriff-depute, or his ſubſtitute, of the bounds for the time being, to nominate arbiters of ſkill and reſpectability for them; and which arbiters ſo named ſhall have the ſame powers as if they had been mutually choſen by the parties themſelves: And that, in all caſes where the arbiters, whether named by the parties themſelves or by the Sheriff, ſhall happen to differ in opinion as to the overſman to be named, it ſhall likewiſe be competent to both, or either of the parties, in the ſame manner, to apply to the Sheriff to nominate an overſman for that purpoſe, whoſe determination ſhall be final, and ſhall be equally binding on the parties, as if ſuch overſman had been named by the arbiters themſelves."

VI. An obligation on the tenant to remove from the poſſeſſion

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at the expiry of the leaſe, without any warning or proceſs of removing. And,

Laſtly, A mutual obligation on the parties to implement their reſpective obligations, under a penalty to be ſpecified, beſides performance; and a clauſe of regiſtration, in common form, to be inſerted in the tack.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Remarks upon the Form of a Lease, drawn up by Andrew Steele, Esq., Clerk to the Signet.

SIR, *Glasgow, 27th June,* 1809.

I HAVE read over with some attention the draught of a lease by Mr Andrew Steele, clerk to the signet, inserted in the 38th Number of your Magazine; and as I cannot approve of some particulars, I beg leave to send you the remarks which occurred to me in the perusal of it.

I observe that Mr Steele has been cautious enough to insist upon a security, along with the principal tenant, for his regular payment of the rent, and performance of the other stipulations. This may be very prudent upon the part of the landlord; but it argues a want of confidence in the responsibility of the tenant. Now, were I a landed proprietor, I would have nothing to do with a tenant who could possibly, in the common and ordinary run of human affairs, even stand in need of a cautioner. This precaution is all that is necessary in matters of business, and, in fact, is all that is ever thought of by mercantile people in their transactions, who must be permitted, even by landlords, to be very competent judges. If more was attempted by them, in the way of precaution, trade would suffer greatly by a thousand useless provisions for what may in all human probability never happen.

Mr Steele deserves the thanks of the agricultural world, for presenting the form of a lease admitting of assignees and subtenants, although it be clogged with certain conditions. It is most agreeable, however, to every person who takes an interest in the real prosperity of this country, to see the general principle admitted, notwithstanding of its being yet in irons. I do not well comprehend the meaning of the first limitation of the general principle mentioned by your correspondent, namely, that the tenant 'shall not be allowed to assign or subset the lease, till he has been at least three years in possession of the same.' And it would have been

been as well, if he had taken the trouble of giving his reasons for this modification. I presume the restriction to be with the view of preventing the principal tenant from leaving the farm, until, by being three years in possession, he has laid out a considerable sum in its improvement. This, to be sure, is rather a circuitous way of accomplishing the end in view; for, instead of making the tenant expend a certain sum in meliorating the land, he is merely compelled to be stationary upon the farm for a limited time, trusting that this stay will produce the desired expenditure. If this be all that is wanted, the clause is either unnecessary or insufficient. The tenant, when he enters into possession, means either to remain in it for a considerable length of time at least, or to let it immediately, or at an early opportunity after his entry. If the first of these alternatives be his intention, then he will of course expend a considerable sum of money in improvements; and although he suddenly relinquishes the farm, the object of the landlord is accomplished without the assistance of the restriction in question. If the second be his intention, then he will not expend a single shilling upon meliorations, but patiently wait till the expiry of the three years, and then subset the farm; in which case, the object of the landlord is not accomplished. It appears, therefore, very plain, that, upon the supposition of its being the tenant's intention to occupy the lands permanently for a series of years, the restriction is unnecessary, because of his own accord he will perform what the clause would compel him to do. If the tenant, again, means to subset from the outset, the restriction is inefficient; because, all that it can do is to force him to continue on the land for the period of three years, without the ground being meliorated in the smallest degree. But the fact is, that if the tenant from the beginning means to subset, the event which is here proposed to be prevented never will happen at all; for your correspondent may be assured, that if the tenant be a man of common understanding, he will expend a considerable sum of money before letting it to another; just as some landlords are in the practice of improving ground at the present moment, by draining, enclosing, and otherwise, before bringing it to market.

I do not understand why the original tenant 'should not be allowed to assign or subset the farm after mentioned in portions, to be occupied by different persons, except as one farm, and for the whole remaining period of this lease, without the consent of the proprietor.' In a note, to be sure, a reason is given for this restriction. 'Middlemen and tacksmen, as they are called, in different places, are debarred here, because they are considered as oppressive to poor tenants.' Now I cannot see the force of this *ratio* for the restriction

striction in question; because the *one* person who happens to take the *whole* farm, and for the *full* period of the original lease, is as much a middleman, or tacksman, as *those persons* are supposed to be to whom *small* portions are let, and for a *shorter* period. For my part, I can see no difference in a landlord leasing the whole in a lump for a length of time to one person, and the same landlord letting the same lands in parts of a whole to a variety of persons, for a shorter term of endurance. The tenant is as much that vile character, called middleman, in the one case, as in the other. The subsetting of the land in this way, to a variety of small people, has a twofold effect; in the first place, of being beneficial, or the reverse, to the landlord; and in the second place, of being either the one or the other to the public, or the poor tenants, as they are called in the note. Had your correspondent made the restriction, because he considered the power hostile to the interest of the landlord, I would have given him credit for the honesty of his endeavours, even although he had been erroneous in point of doctrine. But I cannot help thinking it the very height of hypocrisy, to defend the restriction upon the score of the power not being hostile to the landlord, who alone has any concern in the matter, but because he is pleased to say middlemen are oppressive to a third party, who have no more interest in the land than the Man-in-the-moon. The apology savours too much of the sentimentalist, of the over religious, to meet with the approbation of your readers. But, in fact, what good will this restriction do for those poor tenants, as they are called? The original tenant either lets, or does not let, parts of the farm to these people. If he does, it is because these people apply to him for small portions; and they make the application, because it is their interest to do it; for they are under no obligation to speak to him upon the subject. If, again, it be their interest to take small lots of ground from the original tenant, Mr Steele, instead of consulting the comfort of these poor tenants, renders their miserable situation still worse, by preventing this partial subset; for these people, surely, would not take the ground, unless it was under the idea of bettering their situation in life. The truth of this proposition, although it has escaped Mr Steele, is, I should think, much too palpable to require further illustration. Over zealous people, however, are in general a little blind. If, again, the original tenant will not let portions of his farm to these poor people, then he makes their pitiable condition still worse, in the same way as the landlord would fain do, by preventing him from a partial subset. The truth is, that the original tenant would not have applied to the landlord for the farm, had it not been for his interest; and as little will small tenants bargain

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for parts of it, unless it be to make something of it. It is quite senseles to be crying out against that class of people called middlemen; for they are very useful in society, and form the intermediate link of the chain by which landlords and small tenants are connected. Instead of indulging in this idle sympathy for small tenants, why does not Mr Steele let the land to them in partial possessions, instead of giving the whole to one great tenant? This would be practising, by example, the theory that he preaches. The truth is, he finds it for his interest to let the whole 500 acres, we shall suppose, to one person; and, in the name of common sense and common honesty, why will he not allow the principal tenant to let out the whole in small portions for *his* interest? It is a miserable picture of the human understanding, to hear the cry of late years against middlemen, as they are called, as if the concerns of this world could get on without their assistance. The fact is, this class of people spring up from the wants of society; and, instead of being injurious, are for that simple reason in the highest degree useful. They are the means of diffusing, through all the relations of society, the comforts of life in the cheapest way. Why therefore should they be the object of our daily persecution?

Conceiving, as I do, that the tenant should be upon an equal footing with the landlord during the continuance of the lease, I cannot approve of the modification of the power of subsetting, by which 'the proprietor shall be preferred, if he chooses to have the possession, to any assignee or subtenant, on equal terms; and the tenant shall therefore be obliged to make him the first offer of the said lease; and for preventing collusion in this matter, the proprietor may insist that the terms of a renunciation to himself of the lease be adjusted by mutual arbiters.' It is very obvious, that the obligation to renounce in favour of the landlord is imperative upon the tenant, and the acceptance of the possible abandonment of the tack is optional to the landlord. But why this inequality? The landlord, in parting with his land for nineteen years, has got, or may have got, a rent equivalent to its value; we shall suppose 100*l.* a year. But, upon the principle of the above clause, the landlord may as well take the tenant bound to pay him 150*l.* a year, which is more than the land is worth. The proprietor pretends to demand back the farm upon the same terms only as any indifferent person might get it for; and, in the same breath, he compels the tenant to make him the first offer. But does not your correspondent perceive, that the circumstance of the tenant being bound to make the first offer to the landlord, is a departure from this equality of terms? For, were the tack brought to a public market, there would be no occasion to ask a price

price at all; but offers might be received for it, in the same way as landlords are in the practice of doing at present. If the landlord be to ask only equal terms with any other person, he need ask nothing; because, as no other human being can insist upon an offer being made him, he is, without opening his mouth, upon the self-same terms with all the world. No third party can insist upon the original tenant referring the value of his tack to arbiters; and, therefore, if the landlord is to have the privilege of making this demand, he stands upon a better footing than others. The landlord pretends to be very modest, but is, in fact, vastly more impudent than other people.

I regret exceedingly, that in the draught of a lease, which must be supposed to be intended as a kind of general law upon the subject, the short period of fifteen years should be mentioned as the term of its endurance. That this period, short as it is, may be of a sufficient length in some cases, is very true; but, in the generality, it is much too limited, either for the interest of the landlord or tenant. The period of nineteen years ought to be considered as the general rule, and, as such, to have been mentioned in the lease in question; while fifteen years, or any smaller number, ought to be the exception to that rule. Some landlords are, I know, in the practice, at present, of granting very short leases, perhaps of seven and ten years only; but how far they judge wisely, a little time will determine. Perhaps, if a farm be completely enclosed, thoroughly drained, and in full heart, the period of fifteen years may be long enough; but such an instance is *rara avis in terra.* The fact is, the landlord suffers directly by too long a lease; and he will suffer as really and truly, but indirectly, by too short a one. Both extremes are to be guarded against, as equally injurious to the landlord, but in two different ways.

It is very proper in the landlord reserving power to work the minerals in the lands, and to make roads, &c. for the purpose of carrying on his operations; but I think, for the reasons stated in my remarks upon a former draught of a lease, that the damage in general, without the epithet 'surface,' should be left to the consideration of the arbiters. If the *maximum* of the damage, too, is to be referred to arbitration, why should not also the *minimum?* There seems to be no good reason for supposing these people should not be as good judges of the one as of the other, and equally capable, in both cases, of doing perfect justice to the parties concerned. Such a distinction, therefore, as being unnecessary, ought to be expunged; for it is certainly desirable to have the lease as short and simple as possible.

I should be much better pleased were landlords to take the trouble

trouble of looking a little into futurity, and, before letting a farm, would enclose it to the necessary extent. If they would follow my advice in this particular, the clause in relation to the payment of 6 *per cent.*, or repayment of the value of the fences, would be quite needless. Landlords, however, must be taken as they are; and since they will not, in every case, make the fences before the entry of the tenant, it is well that they do the thing at all. The alternative mode of reimbursing the landlord or tenant, in the event of the one or the other advancing the money, seems to be very fair.

It may be very right for the landlord to reserve liberty to plant, and enclose, for that purpose, such parts of his farm as he shall think proper; but I cannot agree with Mr Steele, that the fences of the enclosure should be 'kept in good repair by the proprietor and tenant jointly.' The plantations are made wholly for the ultimate benefit of the landlord; and, therefore, all expenses attending the rearing of them ought to be at his debit. The landlord might as well take the tenant bound to be at one half of the expense of the trees themselves, and of planting them, as that of rearing them. In the one expense, it is the expense of their birth, and, in the other, that of their education: and in what consists the difference between the two, in point of principle?

Very bloody damages are thundered against the poor tenant, for the purpose of frightening him into taking care of the young planting; but the noise will not have the smallest effect. No one man upon earth can compel another to take that charge of a thing which belongs to the first, as he himself would wish. If the landlord, instead of this compulsory law, would give the tenant an interest in the plantations themselves, by allowing him a percentage on their value at the end of the lease, the clause in question would be totally unnecessary. It is rather a wide way of speaking, to say that a tenant shall be liable in damages for *every injury which could possibly be prevented;* for how is this possibility to be determined for or against the tenant? Nothing short of a proof can settle this possibility; and there will very probably be an appeal to the arbiters once a year. For my part, I would not be a tenant for half rent upon such terms; as, in the event of my landlord being troublesome, I should be vexed to death long before the expiry of the tack.

I remarked at considerable length, in a former paper, upon the extreme hardship of the clause vacating the lease, in the event of a tenant becoming bankrupt; and that I was more than doubtful if it would be supported in a court of law against third parties. In this lease, we have the same clause, to the extent of vacating the lease; but then the severity of the general principle is tem-

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pered by an after explanation. The tenant is to be allowed sixty days to execute an assignation of the lease, for such value as shall be settled by arbiters, by which this very obnoxious clause is left almost without a ground of objection. By this mode of settlement, the serpent is divested of its sting.

I approve highly of the clause which says, that the tenant 'shall not, during the currency of the lease, have two white or culmiferous crops running;' because I believe, in that simple principle almost the whole of good farming consists. But, after this prohibition, it was surely unnecessary to add, that the tenant 'shall labour, cultivate and manure the said lands in a husbandman-like manner;' because, if a white and green crop are to follow each other alternately, the tenant must in fact do what he is here meant to be compelled to perform. Besides, 'husbandman-like manner' is too vague a phrase, and a fact, too, upon which a thousand contrary opinions may be entertained. The after mode of rotation specified in the tack, I confess I do not understand; and, until it be explained, I can neither praise nor blame it. It is a pity, however, that a writing which is intended to explain the meaning of parties, should itself stand in need of a glossary.

I would have been glad, had the landlord paid the minister's stipend and schoolmaster's salary himself; for, independent of the trouble of the collection of trifles to these two classes of men, it seems to be but fair to make the permanent interest bear the contingent burdens.

I have nothing further to say, but that I think your readers are indebted to Mr Steele for the draught of the lease he has been pleased to present to their notice. It is, as I have shown, not altogether perfect; but I am confident there are a thousand worse in daily practice. I am yours, &c.

A Constant Reader.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Reply to the Strictures of Agricola Tertius, p. 18. No. 37.

Sir,

If any thing could add to the satisfaction felt from having procured a discussion upon a subject of the first importance to the agricultural interest, it is, that the draught of a lease which I ventured to criticize has met with an able protector. Having already given my opinion upon the different clauses in that lease, I shall now, with all deference, offer a short reply to the author of the strictures upon my former communication.

Without recalling one sentence of my first letter, or shrinking from

from any trial, judicial or extrajudicial, upon the *facts* therein stated, I beg leave to repeat my former declaration, that I have no interest at stake upon the lease in question; and further, that I am nowise connected with any individual, high or low, who either is now, or ever was, to my knowledge, concerned upon that estate; nor would I offer courtesy at the expense of truth, for thanks from any man: and although Agricola Tertius, in your opinion, may be of high authority, yet, had your correspondents been left to their own discernment, I am not certain but a different notion might have prevailed. From the liberty he has taken in converting my sentiments into such shape as might suit the conclusions he wished to draw, I am disposed to estimate the strictures as not proceeding from an impartial observer.

Agricola Tertius says, (p. 19.), 'If J. B——k was suspected as having never been either an incoming or outgoing tenant, it would have been better said in one word, that he had never been a tenant in any shape.' Had the gentleman been right in the principle, I should have thanked him for his epitome. He may know what is understood by incoming and outgoing tenants, but seems to be unacquainted with that class of tenantry who, succeeding to their forefathers, have, for many generations, continued to occupy the same lands. With respect to such, old leases no doubt have expired, and new ones commenced; but the character of incoming and outgoing tenant could be recognized only in one and the same person. Indeed, estates might be pointed out in Scotland, as well as in England, where more than seven eighths of the tenants never had an opportunity to experience what may be felt by an incoming or outgoing tenant; and, for ought I *ken*, Mr J. B——k may be an experienced tenant of this class. Agricola Tertius is not certain but that I too am engaged in the labour of the ground enjoyed by my forefathers; for he could not be informed that I knew nothing about the matter; and had he offered a challenge to try my knowledge as a practical farmer, I should have felt less diffidence in competing with him between the hilts of a plough, than on paper.

It is the duty of every writer to endeavour to form just and correct notions of the subject on which he would impart his opinion to others. The argument of Agricola Tertius in support of tenants being taken bound in the carriage of materials for the buildings, carries alongst with it its own refutation; for, while he admits this to be a heavy article in the charge of buildings, he at the same time affirms, that a tenant will rather agree to expend the capital himself in this way, than submit to the percentage. This may be the philosophy of Agricola Tertius, but can never be the policy of an experienced farmer.

The first question put (p. 22.), and with the same imperative authority as if by a Judge on the Bench, was not authorised by any thing I had said. Why ask me for my informer? I did not give my offerings as the opinion of others; I did not build my opinion on the *conte-fable* of any body; nor did I say that any general rule should be established as to the extent or measurement of every farm. I suppose the gentleman alludes to what occurs in the second paragraph, p. 468. of my observations, and which requires no explanation, when offered as an answer to the question. In the second question, with the same imperative authority as in the first, he demands of me, 'by whom I was told that the payment of 6 *per cent.* on improvements was a barrier in the way of agriculture.' Had I not known it before, and had I not assigned some reasons for it in the same paragraph in which I said so, I might have answered, that the *grandson* of *Agricola* the *first* has told us, that a tenant had better do the work himself; that he had better sink the capital than pay the percentage.

In offering a few observations to the Conductor of a periodical work, it is not, I believe, expected that the author should enter into an elaborate discussion; and, under that impression, my remarks upon the lease, offered to the public through the medium of the Farmer's Magazine, were submitted to you. In speaking of the meliorations upon land, having said that drainage yields the most immediate return, and having noticed that that beneficial improvement was not included in the lease, Agricola Tertius, (p. 23.), as if the omission had been imputable to himself, to lessen its consideration, has been pleased to rank me with the meanest farmers in Dumfries-shire. In giving that information, had I said that it was as well understood and judiciously recommended by Cato and others in former times, in the same spirit of degradation, the gentleman might have placed me among the antients. The astonishment expressed by Agricola Tertius at not finding something new as to planting, might have been suspended, until I had had time to perform my promise upon that head. As to the *delectus personæ* so much insisted for by Agricola Tertius, without infringing upon that right, a very different construction from that now countenanced might be offered. The letter of the law does not always agree with the spirit of the law. In the contract betwixt landlord and tenant, for the period agreed upon, the parties acting upon the faith that the lease is to endure for that time, the landlord's expectations (and they should not be disappointed) are, that the lands are to be possessed by the tenant contracting with him, or by one equally well qualified. Now, upon this principle, his heir, whether of line or of destination, ought not to be admitted to the actual possession, more than his

his creditors, unless gifted with the proper qualifications for occupying the farm; for, as a right inherent in them from the original contract, in the spirit of the law, I should hold that the *delectus personæ* exercised in the choice of the first tenant would be continued in electing his successor, as suggested by me in my former letter. Though much might be said upon this head, yet, having offered my opinion formerly, I will not trespass further in this reply. Allow me only to express my regret, that the foot-note alluded to by the Conductor should have been considered as pointing at any law agent *individually*. I certainly neither had cause nor inclination to offend the gentleman whom the Conductor had in his eye; but still the justness of my observation must be held beyond the possibility of dispute; for a hundred instances, nowise under the controul of that gentleman, might have been cited to bear me out in the observation made in that foot-note.

May I make a digression, and, while in great company, whisper to my friend Mr J. B——k, that not having objected to the practice proposed, of remitting to tradesmen to report upon the state of houses, &c. on a farm at the tenant's removal, (if that was the essential part of his proposition), he is most undoubtedly entitled to a further hearing; and, in discussing this point, which is an essential one indeed, may I beg of him to hold it as my opinion, that the clause is a good one, but that it would have been proper to have accompanied it with some such understanding clause, that a like visitation and report should be made at the entry of the tenant. I am yours, &c. X. S.

[THAT important national undertaking, the CALEDONIAN CANAL, having much attracted public notice for some years past, it occurred that our readers would receive with pleasure the Sixth Report of the Commissioners appointed to carry on that magnificent work, which is drawn up in a very perspicuous manner. It is to be hoped that the Canal will afford that assistance to the trade and agriculture of the country fondly expected: but whether original expectations are or are not realized in the first instance, we are clear that the public money could not have been better expended; and that ultimately, when the Northern districts are further improved, incalculable benefits must be derived by the people in consequence of this meritorious undertaking.]

FOR THE FARMER'S MAGAZINE.

Sixth Report of the Commissioners for making and maintaining the Caledonian Canal.

THE steady progress of the different works necessary in forming an inland navigation, of dimensions so unusual as the Caledonian Canal, has evinced the prudence and foresight of the arrangements which were at first established by our engineer Mr Telford, and the punctual observance of his regulations by the superintendants employed under him; so that in making this our Sixth annual report to Parliament, we have no unexpected occurrences to relate, and we shall proceed in the usual order of matters, with such observations as we are enabled to make upon the increasing extent of the several works already finished, and those now in operation.

Labour.—Our expenditure on labour has been in some degree checked, by the extraordinary augmentation of the price of timber, which has rendered it prudent, with a view of purchasing a large quantity of that material, which is become necessary for the works at the south-west end of the Canal, to diminish our expenses under other heads. The monthly lists of workmen, which are useful as showing the particular application of labour throughout the year, give an average of eight hundred and twenty-five, being an increase of sixty in number beyond the average of the preceding twelvemonth, which was seven hundred and sixty-five; and the sum expended in labour has increased in nearly the same proportion from thirty-six thousand to thirty-nine thousand pounds. This increase appears to have been applied entirely to masonry; and the progress of lock-building has accordingly been such, as to enable us to take a satisfactory review of that large branch of our present and future expenditure.

Materials.—The Quarries, which were originally established at a considerable expense, have cost nothing extraordinary since our last report. That at Fassefern, upon the western branch of Loch Eil, continues to produce excellent stone for facing the locks, and rather improves in quality as the quarry becomes deeper. On the rising ground above Corpach moss, quarries have been opened for supplying rubble stone for the great chain of locks, which will raise the Canal to the level of Loch Lochie. The stone produced from these quarries is better than was at first expected, though rather more expensive, partly from the necessity of removing an unusual quantity of rubbish, and partly from the cost of gunpowder for blasting the rock. The limestone from Lismore continues excellent, and a large stock of it is now lying at

at the kilns near Corpach, where it is burnt into lime. No freestone has been discovered nearer than Cumbraes, and the small quantity requisite is fetched from thence by the two sloops which were built chiefly for that purpose. The quarries at Redcastle and Clachnaharry supply the masonry at the east end of the Canal. The first of them is now furnished with a convenient pier, rendering it accessible every tide, and which will be a permanent benefit to the proprietor and the public; but the freestone is procured at a greater expense than at first, as having become somewhat mixed with coarser stone, which it is necessary to remove. The quarry at Clachnaharry, distant about a mile from the Muirtown locks, continues to produce abundance of rubble stone for inferior purposes, at an easy expense. During the last year we have purchased cast-iron work principally at the Foundery which has been recently established at Inverness, and which furnishes that article of an excellent mould and quality, for the maintenance and occasional extension of the rail-ways near Clachnaharry. Of Memel crown timber, a large quantity, being part of our first purchase, still remains in store at Clachnaharry; and we have laid in a stock of ash timber at the other end of the Canal, where it will soon be necessary to incur a serious expense in American pitch pine timber; but this is delayed in expectation of a reduction of price in that article.

State of the Works.—Clachnaharry district.—The inspection of the works last autumn by Messrs Jessop and Telford, has given rise to a considerable alteration in the intended mode of constructing the sea-lock at the north-east end of the Canal. It appeared that the extensive sea-mounds which it was necessary to carry out to the distance of three hundred yards beyond high water mark, for the purpose of obtaining a sufficient depth of water at the entrance of the Canal, had settled so much as to require an additional quantity of earth to restore them to their former level; this was to be expected in a certain degree, but a further consideration suggested itself on this occasion; that the sea-lock, if built in the usual manner on a space surrounded by a Cofferdam, at the extremity of these mounds, might subside in like manner, and in consequence become productive of serious difficulty and expense. This apprehension, in conjunction with the high price of timber, which had already delayed the commencement of the intended Cofferdam, determined Messrs Jessop and Telford to prefer a simpler but more secure mode of proceeding, by carrying out a large quantity of rubbish from the Clachnaharry quarry, so as to form a solid mass on the site of the intended lock; and when sufficiently settled, to dig in it a lock-pit, and proceed in the usual manner, confining the use of the Cofferdam to the

outer end of the lock. The two sea mounds have been accordingly extended, the western mound about sixty yards, the other to half that length further than before; and the inner slopes already begin to meet, and cover part of the space where the lock is to be placed. The whole will be a work of considerable labour; and time must be allowed for the weight of the earth to have its full effect: but there are obvious reasons for preferring such expenditure on labour to that on timber, especially at its present exorbitant price. The second, or Clachnaharry lock, has now remained some time in a finished state; and the mortar in the joints has not been in the least affected by the severe frosts of last winter, which proves it to be of a quality suitable to the climate. The oblong bason at Muirtown about twenty acres in area, extends from this lock to the Muirtown bridge, of which the masonry is ready to receive the swivel bridge when necessary. At this place commences the Muirtown chain of locks, of which two are finished with their copings; the next wants only five feet of its height; and of the last or uppermost, the inverted arch, the side walls to the height of five feet, and the forebay, are constructed; so that work more than fully equal to three complete locks is already done. The four locks will all be finished in the present season. The rail-ways extending from Clachnaharry quarry to the sea mounds, and also to the Muirtown locks, have been maintained in excellent condition; otherwise these works could not have proceeded with so much effect. The banks of the Canal through the lands of Muirtown, Kinmylies, and Bught, are now completed: at the latter place they have been formed by means of earth removed from the slope of Torvaine, in order to make a public road there immediately above the Canal. This road is carried along a benching on the side of the hill; and the earth which now remains to be removed will be carried across the Canal to strengthen the artificial bank which separates it from the river Ness at the foot of Torvaine. From Torvaine to the Bleachfield, the Canal was long since completed; and it is more than half finished along the moor of Donanchroy as far as Moulindour, otherwise called the Mill of Dunain. By means of the Clachnaharry lock and the four locks at Muirtown, the Canal will be raised to a level with Loch Ness, when the water is low in the lake; but when its surface is raised by rain, or by a sudden thaw, a regulating lock must be used; (the surface of the water in Loch Ness has been known to vary eight feet in height); and this will be constructed between Moulindour and Dochfour Loch, together with a weir across the river Ness. Westward of this it will be necessary to form a towing path, and perhaps to deepen part of the river Ness and of Dochfour Loch, to complete the

access

access to Loch Ness. After the present season, when the Muirtown locks are all finished, the attention of the Superintendant, and of the rest of our establishment at Clachnaharry, will be chiefly directed to these operations, until the sea mound shall be ready to receive the entrance lock.

Glengary district.—In our last report we stated, that an establishment in the middle or Glengary district of the Canal, was incompatible with the scale of our expenditure; nor can we in justice to the public recede from this opinion, founded as it is on considerations of prudence and economy, whatever satisfaction we might derive from yielding to the repeated requests of the inhabitants, who naturally wish for employment in their own immediate neighbourhood; an advantage which they cannot fail to obtain to the full extent of their desires in the future progress of the work.

Corpach district.—The excavation of the Canal has not yet reached nearer to Loch Lochie than a mile and a half; nor has the weir or overfall projected at Moy been yet executed, as not being necessary till the Canal is in greater forwardness. Between the burn or brook of Moy and the river Loy, the excavation has not proceeded, during the last season, with so much exertion as was desired and expected; and remonstrances upon this subject have been made to the contractors there, who allege the late scarcity of oatmeal in excuse. The several aqueducts of Loy, Muirshearlich, Shangan, Upper Banavie, and Lower Banavie, all described in our former reports, are now finished and in use. Their dimensions are much more ample than at first was intended, that these five aqueducts might save the cost and prevent the inconvenience of as many bridges, by serving the purpose of passages under the Canal for carts and cattle; and the expense has consequently been increased beyond the estimate, in proportion to their enlarged dimensions, from three thousand eight hundred, to nine thousand two hundred pounds; but this excess of five thousand four hundred pounds is more than compensated by saving five bridges, estimated at fifteen hundred pounds each. The masonry of these aqueducts has been found to sustain the frost of two severe winters without injury. Between Shangan Burn and Upper Banavie, the ground is opened along the entire line; and from Upper to Lower Banavie, the banks of the Canal are completed. On Corpach moss, part of the bottoming and upper bank remains to be done. In this district, the great object of attention is the chain of eight locks, to be placed on the rising ground above Corpach moss; and which will be the largest mass of masonry ever yet constructed for such a purpose. It is therefore with particular satisfaction that we are enabled to state the favourable pro-

gress of this great work, the masonry of which was commenced in October 1807; and in May 1808, three fourths of the lowermost lock was reported to be finished. Since that time, the exertions of Messrs Simpson and Wilson, the masonry contractors, have been so steady and effectual, that three locks are finished, and equal to two thirds of another. This progress is beyond our expectation, which was limited to two locks in a year. At the present rate of exertion, the whole chain would be completed within three years of its commencement. We have an additional source of satisfaction in being now enabled to foresee, with a considerable degree of certainty, the amount of expenditure on a large number of the locks, which formed the heaviest article in the original estimate, and have since been enlarged in all their dimensions. In the evidence given before the Committee of the House of Commons, which recommended the Caledonian Canal to be undertaken, Mr Jessop expressed an opinion, that the locks would cost ten thousand pounds each; and Mr Rennie, an engineer of equal eminence, estimated the locks at fourteen thousand pounds each, he having actually built one at Great Grimsby in Lincolnshire, which cost this large sum, though less than the locks on the Caledonian Canal by thirty-four feet in length, and by four feet in breadth. Subsequently Mr Jessop, upon a deliberate view of the whole course of the Caledonian Canal, and after sufficient inquiries into the price of labour and materials, found reason to lower his estimate to seven thousand four hundred and forty-nine pounds; and afterwards, upon the increase of dimensions, and including the digging of the lock-pits and other spade-work, the estimate became eight thousand and eighty-eight pounds for each lock. So soon as a single lock at Clachnaharry and two locks at Corpach were finished, we caused an investigation into the expense to be instituted by means of our abstracted account, and found that the three locks had cost about twenty-two thousand pounds, being considerably less than the estimated expense. From a similar investigation respecting the nine locks now actually finished, we have the satisfaction to infer, that the cost of the fifteen locks first to be made, will not much exceed one hundred thousand pounds, being a reduction of twenty thousand pounds upon Mr Jessop's estimate: but as the principal cause of this reduction of expense will result from the junction of the locks at Muirtown and at Corpach moss, which is not practicable to the same extent with respect to the residue of the locks, being twelve in number (including the two regulating locks) it is not to be be expected that they can be constructed for less than the estimated sum of eight thousand and eighty-eight pounds each; making, in all, an expense of about two hundred

thousand

thousand pounds for locks upon the whole line of the Caledonian Canal. The construction of the Cofferdam, an operation necessarily dependent in a great degree on calm weather, has been retarded by the storms, which continued much later than usual in the present year. It would now be imprudent to commence the tide-lock till next spring, as it would be exposed to unnecessary danger unless completed in one season; in the mean time the embankment and Cofferdam will be prepared for its reception.

Purchase of Land.—Soon after the date of our laſt report, Mr Grant of Bught thought proper to accept the price offered for the land taken at Torvaine, for the purpoſes of the Canal; and two hundred and fifty-eight pounds have been paid to him accordingly. The deceaſe of Mr Grant of Redcaſtle, and the illneſs of Mr George Brown of Elgin, have prevented us from ſettling the rent of the freeſtone quarry at Redcaſtle, though we have been deſirous to expedite ſuch ſettlement as ſoon as poſſible.

Roads.—The new road from Loch-na-Gaul to Fort-William, now almoſt completed, croſſes the Caledonian Canal on Corpach moſs, immediately below the chain of locks. At this place, the intended line of road from Corpach moſs to Loch Lochie commences; and, in November laſt, was examined by Mr Telford, accompanied by Mr Duncombe, the ſurveyor who made the eſtimate, and Mr Simpſon, who was then in treaty to become our ſubcontractor for making that road at the eſtimated expenſe. On this occaſion an omiſſion in the eſtimate was diſcovered, amounting to four hundred and forty pounds; certain embankments neceſſary for carrying the road acroſs deep dingles not having been noticed. Hereupon Mr Telford was directed to make a new apportionment of the whole eſtimate, now augmented to five thouſand one hundred and ſeventy-eight pounds; and of this augmented eſtimate, he was of opinion that we ought to pay eleven hundred and ſixty pounds, inſtead of nine hundred and forty pounds, as mentioned in our laſt report. We underſtand that Colonel Cameron of Locheil, the contributor to this road, has intimated to the Commiſſioners for Highland Roads and Bridges, his wiſh to undertake the contract for the northern part of it, from the burn of Culroſs to Clunes and Auchnacarrie, and that his offer has been accepted. Our contract, therefore, extends no further than to the burn of Culroſs; and, as our propoſal to make this road aroſe merely from a deſire to prevent the interference of workmen under different employers, we deemed it adviſeable to effect that object by propoſing to Meſſrs Simpſon and Wilſon, the maſonry contractors, to become our ſubcontractors for making this road; and they have accordingly undertaken ſo much of it as has been allotted to us, at the eſtimated price of four thouſand two hundred

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and thirty-six pounds, we having previously signed a contract with the Commissioners for Highland Roads and Bridges to the same effect. Messrs Simpson and Wilson have engaged to complete this road on or before the 1st November 1810; but we have reason to suppose that they will finish it much sooner, about three miles in length having been already formed, and fifty men being at present employed upon it. The length of this road, from its junction with the Loch-na-Gaul road, on Corpach moss, to the burn of Culross, is seven miles and a half, and our contract includes also the bridges on Locheil's part of the road.

Accounts.—In arranging our money transactions, and settling our accounts, we have acted on the persuasion that, in justice equally to the public, and to the persons whom we employ, it is incumbent on us to proceed with vigilance and promptitude; so that we have not deviated in any point from the arrangements and plan of checks described in our second report. The monthly bills when paid, are transmitted from Clachnaharry and Corpach, certified by the respective superintendants, and accompanied by a letter from Mr Telford, containing an estimate of the next monthly payment, as compared with his balance in hand, whereupon an adequate sum is written over to the credit of his account at Messrs Hoares, on whom he draws bills at thirty days after date; that being the usual premium allowed at Inverness for bills payable in London. The vouchers are examined and approved on the spot half-yearly by Mr Telford, who then brings them from Scotland. At the present time, we have received the vouchers to the 15th October last, to which time they have been examined and passed by our accountant. Mr Telford is now on the line of the Canal, and will bring with him, at his return, the vouchers to the end of April last, these being the appointed periods of his half-yearly inspections of the progress of the works. A cash-account of our own receipts and payments to May 1806, has been passed at the Treasury; and we are preparing to transmit a further account, extending to the 31st December last. Subjoined to the present report, is an account in the usual form, carried on to the beginning of the present May; by which it appears, that we have received from his Majesty's Exchequer, and as interest on Exchequer bills, adding thereto certain small receipts at Corpach, the sum of nearly two hundred and fifty thousand pounds; of which has been expended nearly two hundred and forty thousand pounds, leaving above ten thousand pounds now at our disposal; besides which, a moiety of the last year's grant is due to us from his Majesty's Exchequer; and the sum of fifty thousand pounds has been already granted by Parliament in the present session.

27th May, 1809.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Letter from Mr Lawrie.

SIR,

I AM extremely ſorry to perceive, that the Hints reſpecting the improvement of the Highlands, which I did myſelf the honour of ſending to Sir John Sinclair from the Weſt Indies, and which were publiſhed in the 33d Number of your Magazine, have given ſo much offence to one of your *conſtant readers* in this city. I can aſſure you, that, when I wrote theſe Hints, nothing could be more remote from my intention, than to offend or injure any individual whatever. As this gentleman ſeems to be much affected, it appears to me that ſome ſecret ſpring in his temper has been unhappily touched. He regrets taking up room in your Magazine; and yet three fourths of his letters are devoted to trifling criticiſms, all of which (though they were better founded than they are) might have been ſpared. The very firſt paragraph of the letter before him having ſtated the difficulties and inconveniences under which it was written, and the views with which it was publiſhed, ſo diſtinctly, it is really aſtoniſhing ſuch criticiſms ſhould have been attempted.

Permit me, on my part, to remark, that if your other conſtant readers pay no more attention to your communications than this gentleman has done to the ſubject on which he profeſſes to write, they will not be greatly improved by them. He has, indeed, cut out certain morſels from my letter, and placed theſe by way of motto before him. Upon certain ideas contained in theſe, he no doubt deſcants critically and dogmatically enough; but the leading points—the improvement of the Highlands—and the employment of the expatriated Highlanders, occupy very little of his attention. He is content to run down the Hints before him in any way; and, like one, whoſe iraſcible faculty has been overpowered, to ſcout every idea that is preſented to his notice. For his many well turned compliments, I muſt acknowledge myſelf his debtor; and I cannot but regret, that, by *omitting to give me his address*, I am deprived of the pleaſure of making this acknowledgement in perſon.

Waving, however, ſuch levities, which ill become a ſubject of ſuch importance, it is evident your correſpondent has done me two pieces of ſervice, of which, perhaps, he was not aware. Firſt, he has brought again, under the public notice, a ſubject in which the community cannot but be deeply intereſted; and, ſecondly, he has called my attention to certain deficiences in my former communication, which, as they ſeem to me to be of importance

portance in agricultural polity, I shall, with your leave, make up in the best manner I can.

I regret that it should be necessary for me to begin with adverting to the point which seems to have affected your correspondent so much, I mean, the character of the Highlander. He compliments me with being a Highlander; and, with great condescension, apologizes to the public in a manner sufficiently dignified and philosophical, for my blind partiality to that class of people, by ascribing it to that *esprit de corps* which is peculiar to all rude characters.

Your correspondent, I hope, will excuse my observing, that this *esprit de corps* displays itself no less in its antipathies than in its predilections; and, though he does not seem conscious of it, his Lowland clannishness is as manifest as he supposes my Highland clannishness to be. The truth is, that the *esprit de corps*, or partiality for one's own countrymen, or one's own peculiar classification of connexions, whether founded on complexion, language, or any other circumstance, is an active principle of great utility,—it promotes good affections,—gives a stimulus to good actions,—and restrains bad and dangerous propensities. Those who would expunge this efficient principle from the list of virtues, and substitute in its stead a lifeless complacency for all mankind, may succeed in destroying the utility of that principle; but they generally retain its discordant qualities.

I am very far, however, from feeling that blind attachment to the Highlanders which your correspondent supposes. Their pride and vanity I detest as much as any man; and I think I would be the last who would wish to increase it; but still, it must be admitted, that it is not without its uses. I happened to be in Inverness-shire during the disturbances occasioned by the Canadian Highlanders, as they were called, and witnessed some of the agitations that were occasioned by that circumstance; but I must say, that I never saw personal pride allayed by sentiments more noble. The critical situation of the country, the arduous exertions, and the great sacrifices making by Government, and by all ranks in the community in the general cause of Christendom, and the confidence which all parties had in the bravery and loyalty of the Highlanders; and, above all, the proof of the public attachment to their interests, which the formation of the great Canal, and other improvements exhibited, operated powerfully on their unsophisticated minds; and, not unfrequently, not only removed their animosity, but induced individuals to betake themselves to the army, in order to give effect to their patriotic sentiments.

I am ready to admit, that, when I wrote these Hints, I might be somewhat influenced by the temper that I had witnessed in the neighbourhood of Cork which I had then just left. In place of that deference to virtuous and manly feeling which every where displays itself in the Highlands, a kind of prostrate vulgarity, that trifles with every thing serious and decent, was constantly before my eyes. An Irish peasant can, at times, make himself agreeable and serviceable to you; but it is only in order to obtain some favourite object. That interchange of cordiality and respectful intercourse, which a Highlander feels as a reward for almost any service, and, without which, the reward that you may bestow, seems to degrade him in his own estimation, are here no where to be found. When one fixes his eyes steadily on this contrast, and knows, that the one race of men, amidst indignities and misfortunes, have uniformly been found among the most loyal and deserving; and that the other, with more advantages than they have faculties to enjoy, are constantly arranged along with the criminal and seditious, it is impossible to regard the captious exceptions of your correspondent otherwise, than as subjects thrown out for the purpose of blunting the effect that the known character and situation of the Highlanders must produce.

I strongly suspect, however, that the difference betwixt your correspondent, and all those who have the same views with him and me, does not lye in the facts, but in the importance that we attach to these facts. In order that such people may see the conclusions to which their principles tend, I shall use the freedom of transcribing, for their use, the description which a very intelligent and respectable magistrate gives of more than three fourths of the remaining inhabitants of this island.

Dr Colquhoun, in his view of the habits and manners of the labouring poor, p. 234, says, 'In the metropolis, and in all the cities and towns where the population is extensive, it is greatly to be lamented, that a large proportion of the working classes are improvident, careless, unthinking, and dissolute in their manners. Many of those whose skill and ingenuity in mechanical employments would soon raise them to a state of independence, from the high wages they obtain, frequently spend a large portion of their time in corrupting their minds, and enfeebling their bodies, in alehouses, trusting to the earnings of three or four days of the week, not only as a source of maintenance to their families, but as a fund sufficient to defray the still greater expense incurred at the alehouse. Instead of enjoying those comforts which are completely within their reach, their children often remain ragged and uneducated; and misery and wretchedness are frequently seen in their dwellings.

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'Among the classes whose labour is less productive, requiring a more constant and uninterrupted attention, it is a melancholy truth, that, with very few exceptions, the alehouse swallows up a large proportion of their annual earnings,—earnings which might produce comfort, where wretchedness only is to be found, and which, in case of sickness or accident, reduces the families to a state of want, requiring parochial relief. Nor are these evil habits confined to the male labourers. It is to be lamented, that the females are not seldom parties in the waste and depravity which produce so large a portion of culpable indigence.'

(Page 237.) 'In the metropolis, and in all large towns, the poor are subject to another excessive burden upon their little incomes, originating chiefly in their improvidence and total want of frugal habits or forethought, which compel great numbers to resort, on every occasion, to the pawnbroker's shop, when want, or even the gratification of any propensity, renders the accession of a small sum of money necessary, which is not seldom laid out, at the same moment, in gin, or some expensive food or other gratification, which might have been dispensed with. In other instances, useful articles are pledged to procure the absolute necessaries of life. So rooted is this habit of trusting to the pawnbroker's shop for assistance, while an article of furniture or a rag remains, upon which money can be raised, that a dependence on this resource often deadens the stimulus to forethought, producing previous exertion. Yet, in so great a degree has it become a habit, that, if these modes of raising money were not accessible, or were suddenly taken away, thousands would unavoidably perish in the streets. The distress, on some occasions, is so great, as to compel the miserable objects to pawn the blanket in the morning to take out the coat, gown, or petticoat; and again, in the evening, to pawn the day garment to relieve the blanket to cover them in the night.'

(Page 239.) 'The agricultural poor are doubtless much less contaminated; but the propensity to flock to large towns, and the fascinating allurements which are presented, aided by the force of example, and stimulated by the state of debasement in which they have been educated, speedily render them victims to the same corruption of morals, the existence of which is also strongly evinced by the vast number of the labouring classes who cohabit together without marriage, whose miserable offspring, from neglect, are rarely reared to maturity; and even in cases where, by strength of constitution, the infants arrive at an adult state, the vicious habits they acquire, in their progress to manhood, generally render them unfit for any useful purpose in society.'

And let me add, that throughout the whole community, from the

the highest rank to the lowest, multitudes, from the depravity of their principles and dispositions, spend their lives in a manner equally base and irregular, not unfrequently aggravating their crimes, by uniting together, as if by instinct, for the purpose of involving others within their vortices.

I suspect, however, that the chief difference betwixt your correspondent and me does not lye in any thing regarding the facts or appearances in the matters concerning which we treat, but in our views and estimations of the nature and importance of these facts and appearances. Your correspondent, and many others, take the same view of their countrymen that a chemist takes of the materials upon which he is to operate; and it may be very true, that all the above classes of people may, notwithstanding their moral defects above stated, be very fit engines for the purposes of political projectors, and commercial speculators and fabricators. They may keep in motion a portion of wealth and influence, superior perhaps to what the same number of Highlanders, in the same circumstances, could effect; and they may be able to perform most of the functions of the British public with sufficient *eclat*. For these reasons, perhaps, such personages may feel well enough satisfied with things as they stand.

If my views of the interests of this country were taken on no higher grounds, perhaps my remarks might have been spared. But it is not merely the immediate, but the ultimate, interests of the community that I contemplate. Our lands may be rated at thirty, or forty, or fifty years purchase; but what security do we possess, that the same moral depravity amongst us will not, within the same number of months or weeks, produce the same political disorder that it has done in every other country of Europe?

Your correspondent is exceedingly fond of classing the Highlander with rude and half-civilized nations: he does not, however, condescend to name any one of these nations in particular. He surely, however, does not mean to say, that the Highlander resembles

'the rude Carinthian boor,
Who 'gainst the houseless stranger shuts the door;'—

nor the Spanish patriots, who lock up their houses and effects from our brave countrymen, who are generously fighting their battles; for he acknowledges that the Highlanders are hospitable. As little will he say, that they resemble the Russian or Polish peasant, who will sprawl at your feet for a coupek, and who will yet rob, dragoon, or trepan you, when an opportunity offers; or the Swiss, who, like a mastiff, will protect, and, like a game-cock, will fight for any master that feeds him, in defiance of that principle of discrimination and attachment that marks the rational being.

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The truth is, your philosophizing friend has allowed himself to be misled by his general principles. The Highlander, though exposed to the hardships of a rude life, from his habits and from his education early acquires more just conceptions of things, than many who figure very high in society. He not only knows, but he feels, the value of virtue, and of a virtuous character of independence, and of preserving his strong and agile body in subjection to his mind; and as he perceives that, in order to raise himself in society, he must submit to privations and persevering exertions, he conforms himself most faithfully to these duties. These qualities, I can assure your correspondent, have a much higher origin than in physical contingencies.

There is one proud distinction that marks the Highlander, not only from every other rude nation, but from all the rest of his fellow-subjects,—I mean, his unalterable attachment to that cause which his head and his heart may have embraced. Those who attend to the vascillations of public opinion cannot but be astonished at the extreme fervour with which the most opposite and incongruous principles are successively maintained, within the shortest space of time, by the same individuals. No man reprobates the views and principles of the Steuart family, nor feels more attachment to those established by the Revolution, than I do; but when any one perceives the dreadful series of crimes and follies that took place from the first dawn of these principles to the expulsion of the family with whom they originated, and sees how often they were lost and recovered by accidents which could not be provided for; and discovers also, that almost every individual concerned in them was sooner or later contaminated by corruption; he cannot help thinking, that the unaltered attachment of this simple class of people to the expatriated family, in every stage of their fortune, confirmed, no doubt, by their detestation of the baseness and treachery which they perceived to be employed against it, exhibits a stability of principle, and a force of character, highly worthy of our admiration. I mean not to defend their political views, nor the measures to which they resorted; I mean only to contrast this general sentiment, and this force of character, with those wavering principles, and that imbecility of mind, which is the sport of party and the tool of faction. And it deserves to be noticed, that a kindred fate has attended our antient race of Kings, and that part of their subjects who imitated their departure from these islands with such unparalleled fidelity. Expelled from their native territories, they hold up to the world a monument of the folly of opposing the current of general improvement, when it becomes manifestly necessary for them to conform themselves to its progress.

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If, however, trustworthiness, cordiality of affection, and sound discretion, joined with a frame capable of sustaining the highest fatigues and exertions, have not lost their value, we may surely, notwithstanding their exuberant vanity, lament the hardships to which the Highlanders have been exposed. These men, not many years ago, after being expelled from their antient habitations, were huddled aboard vessels, which, in many instances, did not afford the accommodation usually given to negroes. The disease and mortality thereby occasioned were augmented, by being subjected to the caprice of a ruffian, who, for the sake of saving a barrel of beef, or a cask of molasses, would prescribe a regimen, which he could not but know would injure the health of all, and endanger the life of many of his passengers. Afterwards, these men were driven ashore, in countries alienated from them by hostile animosity, where their rustic garb and simple manners induced only ridicule and contempt. Thank God, these times have so far passed away; Government has at length put this business under equitable regulations, and laid open a field of relief within its own transatlantic territories. I most sincerely hope, that these arrangements will continue to be most rigidly enforced, and that the privileges and immunities held out to the Highlanders in these distant regions, will be most faithfully and scrupulously performed, both in the spirit and in the letter.

But I wish that your Glasgow friend, and those who would quash their sympathetic feelings by the above considerations, would endeavour to bring the matter home to themselves. How would he, or any of his fellow-citizens, feel, if their fine city was dismantled, and they themselves set adrift, almost pennyless, to the wide world? Would they reckon it a sufficient consolation to be told, that they might retire to France or Flanders, where it was evident they would be received with hatred and contempt, and where, after undergoing the usual process of degradation, they might, in a few years, expect to be employed in driving sledges or making bricks? This case is not too strongly in point; for the main difference arises from that superior strength of body and force of mind, which is known to belong to the Highlander.

I humbly conceive, however, that there is no real necessity for expatriating the Highlander at all; the main difficulty seems to arise from the want of capital. I perceive your correspondent and many others have strange misconceptions on this head. I propose, God willing, to send you my views on this subject by and by; and I hope to be able to convince your northern friends, that there is nothing whatever formidable in this difficulty, and that it is very much in their own power not only to retain at

home their whole population, but to advance it greatly in the scale of society. I am, Sir, your most obedient servant,

Glasgow, 4th August, 1809. DAVID LAURIE.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Consequences of Tithes and Taxes.

SIR,

HAVING, for some time past, had opportunities of seeing your valuable Magazine, I am induced to trouble you with the following detail of facts respecting agricultural improvement in this part of the country, which I request may be inserted at your conveniency.

There is a farmer in this neighbourhood, whom all the farmers hereabout, as well as myself, look upon as an extraordinary improver of land, and one whose merit, in this respect, ought to be more generally known, though, perhaps, he cannot be compared with many of the great improvers mentioned in the Magazine. Stimulated by this gentleman's example, and by the animadversions of Messrs Cully and Bailey, in their agricultural report of Cumberland, the farmers in general, in this county, had got into the road of improvement; but a certain circumstance has damped their spirits for the present, and may probably stop further progress.

The gentleman alluded to returned to this his native county about six years ago, and took a farm in one of the highest and most uncultivated parts thereof, deemed by most people susceptible of little or no improvement whatever, though he has now afforded them ocular demonstration to the contrary. Indeed, when we first observed him attempting to drain a peat moss of about seven acres, and heard him talk of making it carry corn, we seriously thought him mad, as the moss was 15 or 16 feet deep, and of the worst quality. To our astonishment, however, in the course of two years, he gained a crop of oats, not less than six quarters per acre, of good quality, and nearly double in quantity to what was obtained from land in the vicinity, commonly reckoned good; and from the crops of oats, turnips, wheat, rye and grass, which we have seen produced upon said piece of wretched moss, we are now disposed to think it was not so difficult a matter to obtain them as we had formerly imagined.

The first crop having so far exceeded his expectation, he told me that he wished much to have the common enclosed, the extent of which is at least ten times as much as that of the enclosed lands; but, as there was no immediate prospect of that taking

taking place, those concerned being prejudiced against every innovation, till further trials should in a great measure insure the result, he embraced an opportunity that offered, and purchased two hundred acres of an adjoining common, at the rate of 2*l.* per acre, part of which was a swamp, and the rest a moorish soil, on a bottom of stiff clay. He has had the land in possession for about four years, during which time he has enclosed the whole, and divided and improved one half, by paring and burning, liming and ploughing, to a degree not credible by any person who has not seen it, though he had no dung but what was produced from the crops. A few days ago he showed me a statement of this year's crop, which was as follows.

Twenty acres of clover and ryegrass, mowed early in July, and yielded 2 tons per acre, or 3000 stones in all, half of which was sold at 10d. per stone.

Two acres wheat, scarcely a medium crop.

Fifty-four acres oats, very good, not less than six quarters per acre.

Three acres barley, very good.

Three acres peas, not very good.

Eleven acres turnips.

Four acres grass seeds, sown by themselves in May, which, with the turnips, aftermath, straw, and unsold hay, will be sufficient to keep four fattening heifers, not less than 40 stone each, and sixty sheep, besides wintering twenty cows and heifers, eight calves, and six work horses, till the beginning of May. In short, I think the gross produce of this year cannot be estimated at less than 600*l.* on a moderate calculation; but, notwithstanding the wonderful change made by improvement, he has stopped short, and left the other 100 acres in its natural state, assigning, as his reason for so doing, that the *taxes* and *tithes* to which his improvements subject him, swallow up the whole profit. He showed me a note of taxes for the ensuing year, extending to 35*l.* 15s.; and he is of opinion that, in the course of three years, the tithe of his own improved land will be at least 10s. per acre, or 50*l.* a year, which, with the 35*l.* 15s. of taxes, makes 85*l.* 15s., or a trifle above 17s. per acre; a sum which he considers as exceeding his profit, exclusive of legal interest for money expended. Though the *Scotch Farmer* (page 398, vol. I.) may call this gentleman, among others, by the handsome epithet, *obstinately mulish*, for not proceeding in a losing concern, I am inclined to think he would be equally mulish, were he in the same situation. Indeed, the greatest improvers in this country, whether landholders or tenants, seem to be persuaded that, under existing circumstances, such improvements is a losing trade; therefore are laying down their lands in

grass, and allowing those that are unimproved to remain so. Thus, the cheering prospect, entertained for some time past, of one day beholding our extensive common, not less than 24,000 acres, in a beautiful state of improvement, is at an end, at least for the present, as the tithe-owner refuses to take any allotment for his right. Most of the farmers have done a little in the way of improvement, and patches of good turnips are observable in different places; but there is reason to fear, and it hurts me much to think of it, that, for the reasons and causes now assigned, improvement is at a stand. If any of your friends can administer some salutary advice in our present situation, it will much oblige,

Sir, yours, &c.

Cumberland, 1807. A. B.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Remarks on the Account of the Duke of Buccleugh's Improvements.

SIR,

WHEN looking over your Thirty-sixth Number, (vol. IX. p. 471.), I observed a correspondent setting forth the great and various improvements executed upon the estate of that worthy nobleman the Duke of Buccleugh, in the south of Scotland. So far as I am able to judge, the remarks of your correspondent upon these improvements seem very accurate, and well worthy of the notice of storemasters. It is at this time my intention to offer a few additional remarks, which, if thought worthy of a place in the Magazine, are very much at your service.

I approve much of streighting and widening rivulets and drains, provided these things can be done in such a manner as not to stop the walk of the flock; and am of opinion, that they may, in most cases, be effected by throwing bridges across the rivulets and drains, as suggested by your correspondent. In general, I agree in the propriety of what is mentioned, of his Grace having bound his tenants not to allow black cattle to pasture along with the flocks, especially on farms where the land is soft and boggy, from the idea that they destroy surface-drains; and that land, when poached by their feet, or fouled by their dung, becomes noxious to sheep. But there is one thing I would recommend to his Grace, namely, to allow any of his tenants, whose farm consists chiefly of coarse, benty, flat land, to summer a few Highland cattle; and if they are kept for the most part upon the benty parts of the land, and disposed of about the middle or end of July, the farmer will not find his flock in a worse condition at Martinmas, than if there had not been

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one upon the farm, whilst, on an average of years, he will be 40*l.* richer. A farm of this description, that will keep thirty scores of sheep, will easily summer forty black cattle for nine or ten weeks; and, if they are not kept longer than the 20th or 25th July, I maintain, the pasture will be bettered by them; for when that kind of grass, which in our part of the country goes by the name of deer-hair, or broad and small bents, is not kept short, it soon gets into a state that neither sheep nor cattle will depasture it; but, when eaten in time, and kept short, sheep and cattle will pasture upon it a month or six weeks longer, and with more pleasure, than if it had not been toped at all. I know several farms of this description, that, during the three summer months, could maintain almost double the stock they are capable of keeping through the rest of the year, owing entirely to the great growth of these bents. In this case, when the farmer puts no more than an ordinary stock upon the farm at that season of the year, these grasses soon turn so long and brown at top, as to be almost wholly lost; whilst, on such soils, surface-drains are not so easily hurt by cattle as those on soft, boggy lands. I would recommend mole-catching to all farmers, whether they possess land hard or soft, coarse or fine, more than not keeping small cattle; from a conviction that the water, which springs out of their holes or courses in the time of wet weather, proves more injurious to the health of sheep, than either the dung or feet of cattle. In p. 479, your correspondent, speaking of water-flooding, beseeches the farmer to beware of introducing water, especially in autumn, as he affirms that twenty-four hours floating at that season will rot his sheep. If this be the case, what danger must the flock be in, when the farmer allows hundreds of moles to riddle the surface of his ground, in such a manner that, when wet weather comes, the most part, if not the whole of it, is under what may be called pump catch-work flooding, which must, in a short time, bring the flock to destruction.

Your correspondent next recommends building of stells, for the accommodation of sheep in the winter and spring months. He says, that belts and clumps of planting have long been adopted in the lower districts; but that the stells he has chiefly in view, are such as are erected on high lands, to shelter the flocks both from snow and rain. The stells pointed out in p. 473 and 474, I very much recommend. My farm consists of near four thousand acres, on which I have built eight stells, called, in this part of the country, *rounds*, from, I suppose, their being built in a circular, or rather oval form, strait or wide according to the size of the flock. I have, however, no arms to them, nor any black weather stells whatever, as the farm is steep and dry, and seldom

or never visited with storms. If ever it shall be my lot to reside on a farm in a stormy climate, where it often becomes necessary to hay the flocks, or to remove them to lower grounds, I would, provided I had a long lease, or lived under a liberal-minded landlord, who would give encouragement for planting, make trial of a stell of the following description, being of opinion that there is not a farm, except on very high lands, where a spot or two could not be found, on which firs of different kinds would grow; and even supposing such a spot could not be conveniently got, I would still keep the flock at home, and feed them with hay, if it could be obtained, in the following manner. A flock of forty scores will require a circular stell 25 yards in diameter, and the wall 7 feet in height, 4 feet of which to be composed of dry stone, and the remainder of grass sods or feal, the last row having the green side uppermost. The wall should be three feet thick at bottom, and two feet thick at the beginning of the sods or feals; the whole of the dry stone part to be pointed with lime, if it can be conveniently obtained, which will render the stell both durable and warm. On the inside of the wall, I would fix a row of half hecks, about six or eight feet long, and two feet from the ground, fastened by ducks placed in the wall both below and above, and cover them with boards half an inch thick, to preserve the hay from rain. At the distance of three yards from the wall, I would erect a row of hecks, joined close to each other on both sides, forming an inner circle to the wall; then, at three yards distance from the first, a second row of hecks; and then a third row at an equal distance from the second, after which, there will remain a space of $5\frac{1}{2}$ yards in diameter for the site of the haystack, exclusive of $1\frac{1}{2}$ yards between the third row of hecks and the paling round the stack. The whole length of the hecks, taking both sides of the circles, will be about three hundred yards; so that, allowing two yards for every five sheep to stand and feed, which I think will be sufficient, thirty-eight scores may feed at once; and between the circles there is sufficient room for them to pass and repass from one place to another. The expense of such a stell could not be very great, as most of the hecks may be made of young firs, though I would recommend hard wood for their feet and for the ducks. There should also be small doors in the hecks, at the distance of twelve or fourteen feet from each other, for putting in the hay. By the use of such a stell, almost the whole flock might feed at once if they chose, and little hay would be wasted, in comparison of what is lost when laid down in the open field; besides, the waste from the stell would be good nursing hay in the spring, and be converted into dung; whereas that in the open field is totally lost. It will

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be a bad day, indeed, if the shepherd cannot get his flock hayed at some time or other of it; and, when that is done, he may shut the stell door, and go home contented, knit his stockings, and chat with the women about the fire-side, which is the most of his work in the winter season, unless in time of bad weather. In a favourable spring, he may amuse himself with cleaning out the stell, and preparing it for another winter.

If there is a piece of ground fit for planting, to the extent of forty or sixty yards round the stell, it would be a valuable acquisition, as it would answer well for the sheep to stand in while the shepherd was putting into the hecks their allowance of hay, which, in stormy weather, I believe, is 24 lib. English per score, and also would serve as a black weather stell, especially on flat lands, at the breaking of a storm, when every hollow place or sudden *beild* is blown full of snow. If there is a C *stell* on the farm, it is probable that it is filled with snow, so that no shelter can be obtained for the flock, unless they are put into the round *stell*, where perhaps they have been every night for four or five weeks, and which, by this time, must be so full of dung, that, after a few hours of fresh weather, the poor animals must stand knee-deep in dung and water; a situation often attended with fatal consequences to many of them.

I would recommend to any gentleman or farmer who wishes to try a *stell* of this kind, to put a paling around the planting, and along the sides of the entry through it, to the inner stell, and not a stone wall, which would be more apt to collect snow in great wreaths, by which means the sheep might easily get over the fence, and destroy the young trees which, in a few years, if properly attended to, will afford weedings sufficient to keep in repair both hecks and paling. If the stell is to be erected by a farmer, he should, for the safety of his flock, have leave from the proprietor, to cut any of the trees nearest to the inner stell, that have got to such a height as to be in danger of being blown down into it by the fury of the wind in a stormy night; and to replace them with young ones. One of your correspondents says, that a neighbour of his paid no less than 100*l.* for snow mails in the year 1802; and that, since 1794, some flocks have been five, and others six times removed from the ground, for want of food and accommodation. It is really wonderful that storemasters, who have paid so much money for snow mails, while their sheep are half starved, do not try some method to provide for their flocks at home, and not lay themselves at the mercy of a class of Low Country farmers, who will charge a shilling, and perhaps eighteen pence per night for each score of sheep. They will give the flocks indeed the range of the whole farm; but of what con-

sequence is that, when not a single grass pile is to be seen above the surface after Martinmass, except perhaps a little heath? The Low Country farmers know well, that necessity alone brings the storemasters to them, and that, under the present mode of management, they cannot do without them in a stormy winter; therefore must come to their terms. In my opinion, however, there is not one farm in ten, from which, under the present system, the flocks are occasionally removed in severe winters, but what would produce plenty of hay, to enable the farmer to keep his flocks at home, even in the worst winters, and so free himself from the impositions of his Low Country brethren. Ten stones of hay got each year, would be sufficient for a score of sheep, taking the good and bad winters together.

Before concluding, I would advise all farmers, whether in high or low situations, who have a flock or flocks of ewes with lamb, to provide for every flock two enclosures, one of three, and the other of eight or nine acres, the small enclosure for the unkindly ewes, and the large one for those that are kindly, but have not much milk. Such enclosures are useful and necessary for ewes and lambs of all sorts, but particularly those of the white-faced breeds. They also save much labour to the shepherd, who can see the lambs more frequently than would otherwise be in his power, whilst it affords him time to visit his other flocks.

As to what your correspondent states about the flooding of meadows, I can say nothing, having never seen it tried in this part of the country. He says, that Dr Singers reckons 150 stones per acre an average crop; but, as he does not condescend upon the value of the land before flooding, I can form no idea of the advantage gained by the operation.

I am, Sir, yours, &c.

THE STOREMASTER'S WELLWISHER.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Letter from Mr Borthwick on the planting of Scotish Firs and other Timber Trees.

SIR,

A FEW remarks on *Scotish Firs* are subjoined to the following paper on the same subject; which, as containing some well authenticated facts and opinions stated by an experienced judge,* may be not unworthy of a place in your Magazine.

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* I mean *James Farquharson*, Esq. of *Invercauld*, whose estate, situated at the head of the Dee, in Aberdeenshire, comprehending magnificent

"It is generally believed that there are *two* kinds of fir trees, the produce of Scotland, viz. the red or resinous large trees, of a fine grain and hard solid wood: the other, a white wooded fir, with a much smaller proportion of resin in it, of a coarser grain, and a soft spungy nature, never comes to such a size; and is much more liable to decay. At first appearance, this would readily denote two distinct species; but I am convinced that all the trees in Scotland, under the denomination of *Scotch* fir, are the same; and that the difference of the quality of the wood, and size of the trees, is entirely owing to circumstances, such as the climate, soil and situation they grow in. These finest fir trees appear in the most mountainous parts of the Highlands of Scotland, in glens, or on sides of hills generally lying to a northerly aspect; the soil, of a hard gravelly consistence, being the natural produce of these places. The winged seeds are scattered in quantities, by the winds, from the cones of the adjacent trees, which expand in *April* and *May* with the heat of the sun. These seedlings, when young, rise extremely close together: this makes them grow straight, and free from side branches of any size, to the height of fifty or sixty feet, before they acquire the diameter of a foot. Even in this progress to height they are very slow, occasioned by the poorness of the soil, and the numbers on a small surface; which, I may say, makes them in a constant state of war for their scanty nourishment; the strongest and tallest by degrees overtopping the weaker; and, when the winds blow, they lash against one another. This assists in beating off any horizontal branches that might damage the timber with knots, as well as by degrees crushes the overtopped trees. In such state of hostility, they continue struggling, until the master trees acquire some space around them; then they begin to shoot out in a more bushy manner at the top, gradually losing their spiral form, increasing afterwards more in size of body than height; some acquiring four feet diameter, and above sixty feet of height to the branches fit for the finest deal board. The growth is still extremely slow, as is plainly proved by the smallness of the grain of the wood, which appears distinctly in circles from the centre to the bark. Upon cutting a tree over close to the root, I can venture to point out the exact age, which, in these old firs, comes to

magnificent forests of both natural and artificial firs, must have afforded him ample opportunity for observation and experiment concerning them. Mr Farquharson's paper was written in the 1769; and although published in the Appendix to Mr Pennant's *Tour through Scotland*, it may still prove interesting and useful.

to an amazing number of years. I lately pitched on a tree of two feet and a half diameter, as this is near the size of a planted fir of fifty years of age mentioned; and I counted exactly 214 circles or coats, which makes this natural fir above four times the age of the planted one. Now, as to planted firs, these are raised first in dressed ground from the seed, where they stand two seasons or more; then are planted out in the ground they are to continue in, at regular distances, having a clear circumference round them for extending both roots and branches: the one gives too quick nourishment to the tree, which shoots out in luxuriant growths; and the other allows many of the branches to spread horizontally, spoiling the timber with knots. Besides, this quick growth occasions those thick yearly circular coats of wood, which form a coarse grain, of a spongy, soft nature. The juices never after ripen into a proportional quantity their resinous preservative balm; so that the plantations die before the wood acquires age or a valuable size; and the timber, when used in work, has neither strength, beauty nor duration. I believe the climate has likewise a great share in forming the nature of the best wood, which I account for in the following manner. The most mountainous parts of the Highlands, particularly the northerly hanging situations, where these fine fir trees are, have a much shorter time of vegetation than a more southerly exposure, or the lower open countries, being shaded by high hills from the rays of the sun, even at mid-day, for months together; so that, with regard to other vegetables, nature visibly continues longer in a torpid state there, than in other places of the same latitude. This dead state of nature for so long a time, yearly, appears to me necessary to form the strength and health of this particular species of timber. No doubt they may at first show a gratefulness for better soil and more sun, by shooting out spontaneously; but, if the plant or tree is so altered by this luxury that it cannot attain any degree of perfection fit for the purposes intended, the attempt certainly proves in vain.

"From what is said above, it is not at all my intention to dissuade from planting *Scotch* fir, but to encourage those that have the proper soil and situation to do so; being of opinion, that where these circumstances agree, and where planted, not in lines, but irregularly, and thicker than common, the trees will come to be of equal size and value with the natural ones. In confidence of this, I have planted several millions on the sides of hills, out of reach of seed from the natural firs."

Such, *verbatim*, is Mr Farquharson's paper: and his opportunities of information on the subject certainly entitle it to attention. The paper, however, contains some ideas with which I cannot

cannot altogether agree, therefore must take the liberty of giving my reasons as shortly as possible.

I do not mean, at present, to inquire, whether there are two or more, or only one species of *Scotish* fir; but, *prima facie*, I am rather of the former opinion. 'I now' (says *Lord Haddington*, in his neat and very practical treatise of forest trees) 'gather cones from the firs that have the reddest wood, easy to be known from their having been pruned: for, let people say what they please as to there being but *one* kind of Scots fir, and that all the difference we see in the timber is owing to the age of the tree, or the soil it stood on, I am convinced it is otherwise: for I once cut down some of about forty years old, which I thought grew too near my house, and stood within a few yards of one another; some of them were red and hard; others white and spongy, though the seed was all of one parcel, sown in the same spot, and transplanted the same day.'

This is contrary to the supposition of Dr Walker; * but I think his opinion on this point not well founded.

It is stated above, by Mr Farquharson, that the finest forests of fir are in *glens*, or on the *sides of hills*, generally lying to a *northerly* aspect. This he attributes to these glens and northerly hanging situations having a much shorter time of vegetation than a more southerly exposure, or the lower open countries: and his reason is, that it appears to him that a long continuance of the '*dead state of nature* is necessary to form the strength and health of this particular species of timber.' It is true that Dr DARWIN † and Mr Knight ‡ state, that part of the proper juice generated in plants and trees when vegetation is most vigorous, that is, in the course of summer and beginning of autumn, is deposited in the solid matter of the *alburnum*, and remains deposited in it during the winter; and that, in the spring, when vegetation is renewed, this deposite, ready *assimilated* to the vegetable, and adapted to the formation of the new buds and shoots, is dissolved by the ascending sap. But however probable this theory (for it is yet but a theory) may be, there is no reason, either apparent or stated by Mr Farquharson, for holding that the fir requires longer time for this assimilation of sap than any other tree; nor can it be pretended that the fir or any other tree is drawing up sap through its roots during what he calls the 'dead state of nature.' In this state, therefore, the fir must be *chewing its cud*, so to speak; and it is contrary to the laws of nature to suppose that a fir

* Essay on Nat. Hist. and Rural Econ. p. 32, 33.

† Phytologia, p. 28, 158, 163.

‡ Philosophical Transactions 1805, p. 70, 101.

fir tree, like a gluttonous alderman, will cram more meat into its maw than it will have time to digest before the next spring forces it again to swallow. Besides, it is fair enough to add an argument of analogy, since there is no better one on the other side. Now, as to the *oak* or the *ash*, for instance, there is no difference remarked, whether they grow in a situation which has yearly much of the dead state of nature or little of it; or, if any difference is made, the preference is given to the latter situation.

The question, then, comes to be,—why does the firs grow best in glens, and on the northerly sides of mountains? And my answer is,—because, in these situations, it is not exposed to the southerly and westerly winds, which are the strongest winds in Scotland. * No trees thrive well in an exposed situation; † and the fir is, of all other trees, the most obnoxious to winds. Besides the brittleness and fissility of its wood, it does not take such a fast hold of the ground as many other trees, being supported almost entirely by its lateral roots which run along, near the surface of the ground. It might well have been the fir to which Æsop alluded, when he wrote his fable concerning the respective fates of humility and pride: for, by its bushy top, and tall inflexible stateliness, it is broken over by the middle, or laid flat, with a crash, by the tempest; when other trees, by bending and yielding, get safely through. It would appear to me, therefore, that what has just been mentioned, is the cause why the best forests of this kind of wood are, in this country, found in glens, and on the northerly sides of mountains; which shows also, that firs ought never to be planted, as forest trees, but in such situations. Indeed, generally speaking, the finest trees, of whatever description in Scotland, are found in glens, and the northerly sides of hills; a circumstance hostile to the theory of the Laird of Invercauld.

It is mentioned in the foregoing paper, with perfect truth, that planted firs never come to such perfection as natural ones, which, whatever be the cause of it, is a very important fact. Very few situations, indeed, in this country, seem to have a natural predilection for fir. In most situations, where the natural propensity to wood is shown, we see that some kind of hard wood, as oak, or birch, or hazel, is the most grateful. Timber, of the nature of these trees, is by far the most useful for every purpose; and, therefore, it is a fair and an important question, whether the invitation

* This is proved, by almost all trees in exposed situations in Scotland having an inclination to the east and north east.—See *Dr Walker's Econ. Hist. of the Hebrides*, vol. II. p. 233.

† Hence large trees are not found in level countries. This is particularly exemplified by many of the counties in Ireland.

tion of nature to plant hard wood in this country has not been for several years past, and is not yet too much neglected. According to the prevalent taste, a gentleman, wishing to show the world that he has been doing something on his estate, plants a great number of stripes and clumps of Scotish fir: these, if upon moory and exposed situations, never come to any thing; and, if on favourable situations, hard wood would have grown there equally well, and, at any given age, would have been much more valuable; and, generally speaking, (although this will apply, perhaps, but in a less extent, to all sorts of trees), it will be found, on calculation, that the value of the wood, sold at its greatest attainable perfection, does not nearly compensate the want of the soil during the growth. It may be said, that the rapid growth of this tree affords an early shelter. But, in many situations, where this plan of shelter might be adopted, one stone wall would do equally well, which would occupy no ground, and would cost less than one half of the original expense of making a belt of planting; and, in all situations, when the want of permanency in this shelter,—when the greater value that might have been got for other kinds of wood, &c. are considered, it will be found to be very unprofitable. *The only advantage of planting firs*, appears to me to be for the purpose of *protecting and training up young hard wood trees*, which ought always to be interspersed amongst them.* As such hard wood trees are growing to strength, the firs must be gradually pruned and taken out, till they are almost all cut down, to give room to the hard wood, which otherwise will not thrive: And when something similar to this is not the object, the plan of planting Scotish firs seems to me to be highly prejudicial.†

Allow me to add just a word, 1st, on the mode of preparing the ground for planting firs; and, 2dly, on the mode of planting and rearing them.

1. It is the endeavour of many people to have the ground in a pulverized state, before planting firs, to facilitate, as it is said, the spreading of their roots. From repeated trials, it appears to me, that it is better to have the land in lea, and to plant the trees by making pits. For, 1st, it is less trouble, and the pitting pulverizes a sufficient quantity of the soil round about the root of the plant, to let it strike and spread: 2d, it is not so apt to make

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* 'It is surprising,' says Lord Haddington, 'how fast oaks and other valuable trees will grow, when planted under the shelter of firs;' a fact which every person must have remarked.

† See Marshall's *Planting and Rural Ornament*, vol. I. p. 145.

number of long rank weeds and grass to shoot up, which impedes, and often chokes the growth of the seedling: and, 3d, I have observed that the firs planted on ploughed land are most apt to be blown up after growing large, owing, I suppose, to the surface of the ground, always under shade, not coming to so firm a consistency again, as the natural turf.

2. Firs may be allowed to come up in the seed-bed very thick; and should remain there two years from the date of the sowing. Some recommend the removing them to nursery; but the advantage is not equal to the expense and trouble. However, if the planter is not the sower of the firs, as is often the case, it is a good plan (especially when they are to be carried from a better to a worse soil) to plant the seedlings by way of nursery for a year in the soil they are to be planted in as trees, which will habituate them to it, while it will, in a great measure, obviate the risk (which, without this precaution, is great) of any of them dying after they are set out.

If the soil is not stiff and hard, there is an easier way of planting firs than the one by pits, recommended above; namely, a man goes with a basket containing the plants, and a man with a spade, who strikes it into the ground, presses it backwards and forwards, till the slit is made wide enough to receive the root, which the man with the basket sets in, and then with his foot presses it together. Many thriving plantations have been done in this way. Besides expedition, this mode is not so apt to produce the growth of rank weeds in this soil, as pitting.

Great care should be taken not to strangle the plants by setting the roots too deep, a common blunder; two men are always necessary to prevent this; the one to hold the plant at the proper depth, and the other to fix the root with the spade.

I think it better to plant in rows than irregularly, although Mr Farquharson recommends the latter mode; for the trees are the more easily and regularly thinned. Every second, or every third row, according to the distance of them, (which is modified, a good deal, by the nature of soil and situation), should be interspersed with hard wood trees; for it answers equally well, and comes cheaper at first, by the difference of the price of the hard wood and the fir seedlings, not to plant distinct and continuous rows of hard wood. Then, in thinning, the fir trees, interspersed with the hard wood, are cut out first, leaving all the hard wood: the room thus made will allow the intervening continuous rows of firs some more time to grow to a useful size, before the increase of the hard wood trees makes it necessary to cut these intervening rows almost entirely out.

I disagree much with Mr Farquharson, as to the planting of firs

thick.

thick. If planted in company with hard wood, as they ought always to be, thickneſs is perfect ruination. Planting thick, eſpecially in the caſe of firs, is the general blunder. Half of the fir plantations in Scotland have been ruined by thick planting. Choking each other, they have grown up, like the ſprouts of a pollard, tall and ſlender; and, conſequently, whenever one dies, or a breach, by any means, is made in the plantation, there the wind takes impreſſion, and, the trees being unable to ſupport themſelves individually, the vacancy is widened and widened, until thouſands are deſtroyed. There is an inadvertence which may have frequently led to the thick planting of trees on the ſides of hills. It has not been attended to, that no more trees can grow upon an inclined, than upon an horizontal plane of the ſame baſe, as trees grow perpendicular to the baſe. Allowance has frequently not been made for this; and, accordingly, many thouſands of trees are preſently growing at no greater diſtance from each other, than one or two feet, although they were ſuppoſed to be planted at the diſtance of four or five. It is an univerſal rule, in planting firs at leaſt, that every tree ſhould be placed ſo as to grow up habituated to the wind and weather of its expoſure, and be able to ſupport itſelf, without truſting entirely to the ſhelter of its neighbours. From this, it follows, that all plantations ought to be continually undergoing weedings, and thinnings, and prunings, to prevent the branches of any tree from touching or overhanging thoſe of another, thereby giving the trees ſoil and air to grow ſtrong, which is the only way to make them uſeful. This is pointedly applicable to fir trees, as demonſtrated to me by the following coſtly experiment.—There is a fir plantation, under my eye, about ten years old, which was very thriving, until ſpring 1808, when it was nearly deſtroyed by the ſnow. The trees had been originally by far too thick planted; they had alſo been neglected to be thinned; and, conſequently, grew quite impervious. Accordingly, the ſnow falling upon them, could not get to the ground, and, collecting on the top branches, (which, being ever green, are always thick and buſhy), left a vacuity below. The weight of the ſnow accumulating, ſoon overpowered the trees, and cruſhed them to the ground: ſome of them that were not cruſhed, were bent; others were completely ſtripped of their branches in a moſt ſingular manner, and left ſticking up in the air, here and there, like ſo many poles. Now, had the plantation been thin, this calamity would not have happened; becauſe the ſnow would have got to the ground, and, however deep it might have fallen, would have built in the trees, and formed, on the ground, foundations and ſupports for itſelf.

And now, Sir, praying that you, and your many worthy and intelligent

intelligent brethren may flouriſh in the midſt of your crops, your oxen, and your ſheep, and alſo that you may never forget the *wood*, and the WOODEN WALLS of *Great Britain*, I moſt reſpectfully ſay, Amen.

C———n, July 15. 1809. J. BORTHWICK.

NOTE BY THE CONDUCTOR.

THE above ſenſible and ingenious remarks have been peruſed by the Conductor with great ſatisfaction; and he rejoices to obſerve a young gentleman of great expectations devoting a part of his time to the conſideration of a ſubject particularly connected with the intereſt of every proprietor of land in Scotland. The Conductor reſpectfully ſolicits a continuation of Mr Borthwick's favours, which, at all times, will meet with ſuitable attention. The planting of timber trees is an important branch of national improvement, though, perhaps, too much diſregarded. Were tenants made to have an intereſt in the growth of trees, that is, were a certain proportion of each plantation, made and trained up by them, to be their property at the concluſion of a leaſe, it is highly probable that innumerable pieces of land, upon every farm, would be immediately devoted to timber culture. On this branch of the ſubject, the Conductor will be glad to hear from Mr Borthwick. N.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Letter from the Reverend Mr Campbell.

SIR,

IN one of the early Numbers of your Magazine, a correſpondent aſſerts, that plucking the bloſſoms off potato ſtems will double the produce of the crop.

To endeavour to prevent any of your readers from conſuming their time and labour, not only uſeleſsly, but miſchievouſly, in depriving the moſt important of all vegetables (not the *root of ſcarcity*, but the *root* and ſource of plenty) of its moſt beautiful variegated flowers, the pride and the glory of our fields during a conſiderable part of the ſeaſon, I have to aſſure you, that, by an accurate trial made by me laſt harveſt, it is not attended with any benefit whatever. A ſpace occupied by potatoes, carefully deprived of their bloſſoms, and carefully compared with ſpaces of equal extent at both ends, and on each ſide, had not a ſingle pound weight of produce above any of them. The ſpace from which the bloſſoms were taken, regularly as they made their appearance, beginning on the 14th Auguſt, conſiſted

conſiſted of four yards in length, of four contiguous rows, diſtant 2½ feet; and the ſets, being top ends of large potatoes, planted 12 inches aſunder in the rows. The roots were taken up on the 3d of October, when the ſtems were withered, indicating the ripeneſs of the crop. The produce was 61 lib. 12 oz. Amſterdam weight, being preciſely the ſame with that of each of the four ſpaces with which they were compared.

I beg leave, at the ſame time, to give you an account of ſome experiments made on oats in 1808. The ridges, in four experiment plots, were five feet broad; and each plot was about ¼ of an acre Engliſh ſtatute meaſure. Two of the plots, after being harrowed, were ſown broadcaſt, and again harrowed in the uſual manner. The other two, after being harrowed, had the ſides of the ridges pared by the plough; and the earth, thus gathered into the furrows, was, by means of a ſhovel, thrown over the ſeed ſown upon the ridges, which, after paring them, were about three feet broad. A man can, in this manner, cover an acre in a day. The intervals, during the growth of the crop, were kept clean, and the earth in them raiſed up to the ridges, by the implements employed in the cultivation of potatoes and turnips.

The following is the reſult.

	B.	P.
No. 1. Produce of ¼ acre covered by a ſhovel, (1ſt crop after potatoes)	2	0
Deduce ſeed	0	1½
Clear produce	1	14½
No. 2. Produce of ¼ acre contiguous, (1ſt crop after potatoes), ſown and harrowed in the uſual manner	2	2
Deduce ſeed	0	5½
Clear produce	1	12½
From clear produce of No. 1, as above	1	14½
Deduce do. of No. 2.	1	12½
Balance per ¼ acre in favour of ſhovelled oats	0	1½

Which, multiplied by 4, is 7 pecks, at 1s. 6d., =10s. 6d. per acre.

	B.	P.
No. 3. Produce from ¼ acre ſhovelled oats, (2d crop after potatoes)	1	3
Deduce ſeed	0	1½
Clear produce	1	1½
No. 4. Produce from a contiguous ¼ acre harrowed oats, (2d crop after potatoes)	1	4
Deduce ſeed	0	4½
Clear Produce	0	15½
From clear produce of No. 3.	1	1½
Deduce do. of No. 4.	0	15½
Balance in favour of ſhovelled oats	0	2

Which, multiplied by 4, is 8 pecks, and the value of it, at 1s. 6d., 12s. per acre.

It may be objected, that the broadcaſt plots got too much ſeed; but, if that was the caſe, how came the clear produce from No. 3, to exceed that from No. 4, which got leſs ſeed than given to the broadcaſt plot No 2? I leave to others, deductions and corollaries from the above experiments; with theories to account for the reſult of them; and calculations of the advantages to be derived to the nation, from adopting the practice which they recommend. And I remain, Sir, your obedient ſervant,

Kilcalmonell, 4. *July*, 1809. ALEXR. CAMPBELL.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Information wanted respecting the Preſervation of Soil in Holms or Haughs.

SIR,

IT is well known, that, in many diſtricts of Scotland, the fineſt of the ſoil, ſituated in the *Holms* or *Haughs*, is very much expoſed to be run away by the rivers when ſwelled by rains. It would, therefore, be deſireable to receive information from ſome of your correſpondents, concerning the moſt practicable and effectual remedy for this pernicious evil.

Whatever gentleman, with due experience, communicates the information ſolicited, he will oblige the country, and receive the thanks of your moſt obedient ſervant,

Gala-Water, *May*, 1809. RIPA.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Reply to Thoughts on Paper Credit, No. XXXIX. p. 317.

SIR,

I WAS ſomewhat ſurpriſed to obſerve in your laſt Magazine, a paper ſigned a *Private Banker*, raking up the old ſtory concerning paper credit, and an over extended circulation, which was attacked by *Jog Trot*, (who really ſupported his arguments with much good humour), and was anſwered in the ſame way by a *Country Gentleman*, whether *ably* or not, the public are the beſt and only judges.

I ſhould have thought, that, after a ſilence of two years, the ſubject had been carried down the Lethean ſtream of forgetfulneſs, thence never to return. But, lo, and behold, this *Private Banker* (clad in the complete ſteel of *dogmatical egotism*) ſteps forward to drag the quiet *Country Gentleman* once more before the tribunal of the public. Leſt he ſhould imagine that he has *triumphantly* run off with the *harrows* over a *paper-mill* field, I ſhall take up the cudgels for my friend the *Country Gentleman*, and endeavour at leaſt

to

to analyze, if not to *refute*, thoſe arguments of his, which will probably be found more *ſpecious* than *ſolid*.

The *Private Banker* ſets out by uſing the hackneyed adage of, *Ne ſutor ultra crepidam*,—an application, at all events, *illiberal*, if not *ill-bred*; and the axiom made uſe of by the *Country Gentleman*, ſeems to have called forth ſome *ireful latent* daſhes of *would-be wit*. As it is given at full length by him, I ſhall not touch upon it now, further than to obſerve, that, *totidem verbis*, it ſeems to contain a truth as invariable as 2 and 2 make 4. But, Sir, in this age of *illumination*, ſceptics will doubt, and endeavour *logically* to prove, that 2 and 2 make 5. However, the current buſineſs of the world will not ſtand ſtill, until thoſe *illuminati* ranſack their *woolgathering brains*, to favour the public with their *vagarious eccentricities*.

In one part of his eſſay, he ſays, 'But I would juſt aſk him,' (viz. the *Country Gentleman*), 'Does the Eaſt or Weſt India merchant, the great manufacturer, or, in ſhort, the whole mercantile and manufacturing world, find ſecurity to the public for the amount of their engagements? How, then, does he ſingle out a particular profeſſion, that of banking, and hold it up to the public as depending on popular opinion ſolely for its exiſtence?' &c.

Heavens, Sir, are we to be told, at this time of day, that a ſlip of paper with a government ſtamp upon it, and the ſignature of *Tom-a-Styles* or *John-a-Nokes* attached to it, has any earthly intrinſic value, (excepting what the public opinion gives to its credit)? Far leſs is this *bauble*, or rather *bubble*, to be put in competition with our *manufactures*, or the *produce of our colonies*, by which the merchant or manufacturer ſo juſtly acquires his credit from the public, and which, at all events, bear a floating value according to the ſtate of the markets. To any one averring, that ſuch perſon or perſons have a right to obtain equal credit from the public for what *notes* they choose to iſſue, we may juſtly ſay—*Risum teneatis, amice!*

This *Private Banker* has quite garbled the letter of the *Country Gentleman*, and only makes ſuch partial extracts as ſuit his own purpoſes. He repreſents him as writing againſt *banking* in general; but if he will take the trouble of examining that letter, he will find moſt honourable mention made of the profeſſion, and of the *fair dealer* in that buſineſs. It is only againſt an over-extended circulation of paper-money, ſupported by a baſeleſs *windy* credit, that the *Country Gentleman* wages war,—one that is likely to *blaſt* all who come within its baneful *vortex*.

How far an act of Parliament, tending to check this *evil*, might fully anſwer the ends of doing ſo or not, may be an enigmatical point to anſwer for its ſucceſs; but, that it is a growing *evil*, our daily prints but too lamentably *exemplify*: and though we

have, as yet, but few instances, in this country, of such *adroit swindling* as prevails in the sister *metropolis*, yet let us beware of innovation. Already robberies have been committed near Haddington, and pockets have been picked in the market. Such *creditable manœuvring* would probably be hailed by the farming interest of this district with the same *auspicious joy* as the introduction of English *poor's rates* and *tithes* into our Scotish system. But as the *argumentum ad hominem* always carries most weight with it, I shall beg leave to adduce an instance in support of my general doctrine.

Two or three years ago, in the city of Newcastle-upon-Tyne, a banking-house of the *highest respectability* (a phrase appropriate to the jargon of modern days) stopped payment for above half a million of money. An acquaintance of mine being then in London, mentioned the circumstance upon *'Change*, but was literally *laughed to scorn* by the monied interest there,—ridiculing, in the extreme, the possibility of there being such an extensive *circulation* in the *north* of *England*. Unfortunately for thousands of creditors, the fact was but too severely *felt;* no dividend has yet been made, or is likely to be made; and they and their families live to *curse* and *execrate* that *high respectability* which has involved them in *utter ruin*.

Now, Sir, let me, in *due course* of argument, ask the *Private Banker*, whether it is likely, that if this *respectable* banking-house had had such a check over it as that pointed out by the *Country Gentleman*, viz. the finding security to the public for two thirds of its intended circulation of NOTES, that they would have pushed matters so far as to have failed for half a million of money, without even the *prospect* of ever making a dividend?

I shall now, Sir, take leave of the *Private Banker;* and, as he has the field of argument left open for him, he may again yoke his *dogmatical harrows*, to run over the wide-extended field of paper-credit. Neither I or the *Country Gentleman* will probably ever enter the lists with him again, at least on that subject; and should he (according to his promissory note) again favour you with his lucubrations, I would recommend to the author of a paper upon *Public Credit* to take him in *tow*. This able and original essay appeared in a late Magazine of yours; and as the author seems to write *fluente calamo*, he will probably find no great difficulty in answering the *Private Banker*. I am, &c.

VINDEX.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Information requested concerning Steaming Potatoes.

SIR,

I AM one of a club, in a distant part of this county, who take

take in your Magazine, from which we gather many useful hints; and as we see you are always ready to give help to those who want it, I have been desired to address this to you, hoping, by your means, to obtain the object we have in view, which is shortly this. Seeing from your book, and hearing from others, that steamed or roasted potatoes are much recommended for horses, and every kind of cattle, being not only very fattening, but a great saving in the article of corn, it would be doing my neighbours and me a great favour, who have planted a more than ordinary quantity this year, if any of your correspondents would communicate how this can be done in the cheapest way, as we cannot afford iron kettles, &c. We should no doubt understand it better, if a drawing or rough sketch was furnished, or if you could tell us how to build a kiln for roasting them. We might manage this better, being more in our way, that is, if roasting is reckoned as good as steaming, which you will no doubt be able to tell us. Hoping this may catch the eye of some of your correspondents, I shall conclude with wishing a continuation of success to your valuable publication. And remain, for my neighbours and self, Sir, your obliged humble servant,

Perthshire, 25. July, 1809. A FARMER.

P. S. It would be adding very much to the obligation, Mr Conductor, if you would insert this in your next Number, so as we might get an answer before winter.

FOR THE FARMER'S MAGAZINE.

Account of a Method of hastening the Maturation of Grapes. By John Williams, Esq. In a Letter to the Right Hon. Sir Joseph Banks, Bart. K. B. P. R. S. &c. Communicated by Sir JOHN SINCLAIR, *Bart.*

IT is a fact well known to gardeners, that *vines*, when exposed in this climate to the open air, although trained to walls with southern aspects, and having every advantage of judicious culture, yet, in the ordinary course of our seasons, ripen their fruit with difficulty. This remark, however, though true in general, admits of some exceptions; for I have occasionally seen trees of the common *White Muscadine*, and *Black Cluster Grapes*, that have matured their fruit very well, and earlier, by a fortnight or three weeks, than others of the same kinds, and apparently possessing similar advantages of soil and aspect.

The *vines* that ripened the fruit thus early, I have generally re-

marked, were old trees, having trunks eight or ten feet high before their bearing branches commenced. It occurred to me, that this disposition to ripen early might be occasioned by the dryness and rigidity of the vessels of the old trunk obstructing the circulation of that portion of the sap which is supposed to descend from the leaf. And to prove whether or not my conjectures were correct, I made incisions through the bark on the trunks of several vines growing in my garden, removing a circle of bark from each, and thus leaving the naked alburnum, above an inch in width, completely exposed: this was done in the months of *June* and *July*. The following autumn, the fruit growing on these trees came to great perfection, having ripened from a fortnight to three weeks earlier than usual: but, in the succeeding spring, the vines did not shoot with their accustomed vigour, and I found that I had injured them by exposing the alburnum unnecessarily.

Last summer these experiments were repeated. At the end of *July* and beginning of *August*, I took annular excisions of bark from the trunks of several of my vines; and, that the exposed alburnum might be again covered with new bark by the end of autumn, the removed circles were made rather less than a quarter of an inch in width. Two vines of the *White Frontiniac*, in similar states of growth, being trained near to each other on a south wall, were selected for trial. One of these was experimented on (if I may use the term); the other was left in its natural state, to form a standard of comparison. When the circle of bark had been removed about a fortnight, the berries on the experimented tree began evidently to swell faster than those on the other, and, by the beginning of *September*, showed indications of approaching ripeness; while the fruit of the unexperimented tree continued green and small. In the beginning of *October*, the fruit on the tree that had the bark removed from it was quite ripe; the other only just began to show a disposition to ripen, for the bunches were shortly afterwards destroyed by the autumnal frosts. In every case in which circles of bark were removed, I invariably found that the fruit not only ripened earlier, but the berries were considerably larger than usual, and more highly flavoured.

The effects thus produced, I can account for only by adopting Mr Knight's theory of the downward circulation of the sap, the truth of which these experiments, in my opinion, tend strongly to confirm. I therefore imagine, by cutting through the cortex and liber, without wounding the alburnum, that the descent of that portion of the sap which has undergone preparation in the leaf is obstructed, and confined in the branches situated above the incision; consequently, the fruit is better nourished, and its maturation hastened. It is certainly a considerable point gained in

the

the culture of the vine, to be able to bring the fruit to perfection by a process so simple, and so easily performed, But, lest there should be any misconception in the foregoing statement, I will briefly describe the exact method to be followed by any person who may be desirous of trying this mode of ripening grapes. The best time for performing the operation on vines growing in the open air, is towards the end of *July*, or beginning of *August;* and it is a material point, not to let the removed circle of bark be too wide: from one to two eighths of an inch will be a space of sufficient width. The exposed alburnum will then be covered with new bark before the following winter; so that there will be no danger of injuring the future health of the tree.

It is not of much consequence in what part of the tree the incision is made; but, in case the trunk is very large, I should then recommend, that the circles be made in the smaller branches.

It is to be observed, that all shoots which come out from the root of the vine, or from the front of the trunk situated *below* the incision, must be removed as often as they appear, unless bearing wood is particularly wanted to fill up the lower part of the wall, in which case one or two shoots may be left.

Vines growing in forcing houses are equally improved in point of size and flavour, as well as made to ripen earlier by taking away circles of bark. The time for doing this, is when the fruit is set, and the berries are about the size of small shot. The removed circles may here be made wider than on vines growing in the open air, as the bark is sooner renewed in forcing-houses, owing to the warmth and moisture in those places. Half an inch will not be too great a width to take off in a circle from a vigorous growing vine; but I do not recommend the operation to be performed at all in weak trees.

I think that this practice may be extended to other fruits, so as to hasten their maturity, especially *figs*, in which there is a most abundant flow of returning sap; and it demonstrates to us, why old trees are more disposed to bear fruit than young ones. Miller informs us, that the vineyards in *Italy* are thought to improve every year by age, till they are fifty years old. It therefore appears to me, that nature, in the course of time, produces effects similar to what I have above recommended to be done by art. For, as trees become old, the returning vessels do not convey the sap into the roots with the same facility they did when young. Thus, by occasionally removing circles of bark, we only anticipate the process of nature. In both cases, a stagnation of the true sap is obtained in the fruiting branches, and the redundant nutriment then passes into the fruit.

I have sometimes found, that after the circle of bark has been

removed, *a small portion of the inner bark has adhered to the alburnum.* It is of the utmost importance to remove this, though ever so small; otherwise, in a very short space of time, the communication is again established with the root, and little or no effect produced. Therefore, in about ten days after the first operation has been performed, I generally look at the part from whence the bark was removed, and separate any small portion which may have escaped the knife the first time.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

The Optic Square.

SIR, *East Lothian, 1st July,* 1809.

AT a period when so much attention is paid to improvements in Agriculture; so many great rewards held out for the invention of its implements; and such exertions of course used for their discovery, I am persuaded that every hint which can tend to its advantage—information of every instrument applicable to any of its operations, must be acceptable to you and your readers.

I conceive it almost equally meritorious to discover the application of an instrument (already invented) to the purposes of agriculture, as to invent a new one. Under this impression I introduce the *Optic Square* to your notice.

This instrument was originally invented for, and applied to military purposes alone. It was used for squaring off encampments; and, for that purpose, nothing can be more convenient, or more correct. It consists, apparently, of one circular brass box, about two inches diameter, and one deep, with two mirrors within; all of which, together, scarcely amount to four ounces avoirdupois weight: it may therefore be carried in the pocket, at any time, without inconvenience. The box, though seemingly one, has a counterpart, which serves as a cover. It has three apertures in its side; one of which is round, for the eye; the other two of a square form. The cover turns round; and, having three openings perfectly similar to those in the box, it is fitted for observations when these correspond, like to like, so as to be *seen through*, and admit reflected objects to enter. The cover is chiefly for keeping the mirrors clean. To use it, let a pole, or any object, be supposed on the left hand of the observer. He must hold the box between the fingers and thumb of the right hand, and put the round hole to his eye—the larger square one at the side next the pole—and look straight forwards. The pole will be reflected from the larger mirror, on the right, to the smaller one opposite

poſite the eye, on the under ſide of the opening. Over top of this laſt is a plain glaſs, through which is ſeen the open fields: and, if one is appointed to attend with a pole in that direction, he can, by ſignal, place it on the line of the image of the one reflected; and it will be found at right angles with the line from the eye of the obſerver, to the other pole. If he turns his left hand to this laſt ſet pole, and orders another to be fixed before him by means of *its image*, the firſt and third pole will be found exactly in a line with his ſtation; and is a moſt effectual method of proving the correctneſs of the inſtrument. When it is neceſſary to drive a perpendicular from a pole on the right hand, the box inverted muſt be held in the left hand, with the greater ſquare opening to the right. The ſmaller mirror being now *above* the plain glaſs, the image of the pole muſt be looked for there, and directions given for placing other poles, as above.

This optical inſtrument is admirably fitted for taking the moſt extenſive off-ſets in land-meaſuring; and with great correctneſs ſupplies the place of the theodolite, or any mathematical inſtrument for that end. By means of the Optic Square, too, a right-lined figure of any ſize can be meaſured with the utmoſt accuracy in the ſhorteſt time, by taking one diagonal and two off-ſets. The calculation by theſe lines *actually measured* muſt evidently be more correct than finding them by protraction, and aſcertaining the content by common arithmetic, or even by the ſhorter proceſs of logarithms. One ſpecimen ſhall be given by the figure annexed. Within its comprehenſive range will be ſeen very diſtant hills, and other notable objects: and beſides the many other purpoſes to which it may be applied, it will be found a good amuſement to try the accuracy of general or more particular maps. But whatever may be the latent properties of this inſtrument, or to whatever purpoſes it may have been actually applied, there are certainly none of ſuch real utility as thoſe for which I now recommend it. When the buſineſs of the farmer can be facilitated, and rendered more expeditious by ſimple means, it muſt certainly be conſidered an improvement. It is well known what time is loſt in ſtraighting land, or forming it into ridges, when, by croſs ploughings, harrowings, &c. it is thrown into one complete level. It is alſo admitted on all hands, that if croſs ploughing, harrowing, rolling, &c. are not done in parallel veerings, the labour is increaſed, or the time of executing it protracted. Now, to remove theſe evils—to render all this fatiguing work an eaſy amuſement, even for the *fattest farmer*, is the object of this eſſay.

I ſhall endeavour to give ſuch further directions for uſing the Optic Square, that none need be at a loſs to apply it to practical purpoſes, when occaſion offers.

Let

Let A L be a right-lined field to be croſs-ploughed by the veerings A B, C D, E F, &c. It is common to lay off theſe veerings at 24 ells diſtant from each other, by pacing; but, as 24 ells make a Scotch chain, the diviſions here ſhall be made by the chain, which does not prevent any perſon to uſe paces. From the line A B, lay off at A 12½ links to *a* (exactly 3 ells). Place a pole with a white flag on it at O, and ſend one (even a boy) with what poles may be moſt convenient at the time, to wait ſignals between B and D. Let the obſerver place himſelf at *a*; and, turning the large ſquare opening towards O, he will find the image of the pole O reflected on the ſmall mirror right before him. By ſignals with the hand, the boy can be directed to place a pole in the line of that image, which will be at *b*. Lay off A C, C E, E G, &c. each one chain diſtant from another. Let C, E, G, I, &c. be ſucceſſively taken as ſtations from which to direct, in the way above deſcribed, the place of the poles D, F, H, K, &c. Except a few poles at D, F, H, &c. for immediate ploughing, all the other parallel ſtations, K, &c. can be marked by ſmall wooden pins or ſtones, as moſt convenient. Let the veerings *a b* and C D be ploughed. The firſt is 25 links broad, the ſecond 50, or half a chain, (12 ells). Theſe are ſufficient for what we call the happings (offings), or done by the horſes turning *off the* DRIVER, (a term once in exiſtence, but now only ideal.) It will then be found that the unploughed ſpace between the veerings *a b* and C D, is 50 links or 12 ells, which, being winded out, or done by the horſe coming conſtantly TO *the driver*, will make the veering *a b* = 12 ells; and when the ſpaces between C D and E F are ploughed out, C D will be one chain broad; and every ſucceeding veering will be equal in breadth to that of C D. If the field is to be croſs-harrowed, two or three parallel veerings, as at S T and U V, may ſuffice. One head of harrows may proceed from S T to A B; another from S T to U V; and a third from U V to X L, which is all the ſquare part of the field. Rolling would require ſpaces like ploughing; but every man may do in theſe things as circumſtances direct to his own mind. Some *correct farmers*, in ſtoning young graſs during the ſpring, lay up the ſtones in parallel rows acroſs the field, for the more eaſily admitting of rolling, which muſt be done commonly before they be lifted. By this method, which is much to be approven of, the land can be wholly rolled, except the ſpots on which the heaps lye. It is an eaſy matter to apply the Optic Square to fix theſe lines.

The fallow which the figure repreſents being now ſuppoſed level, and ready for ridging up, the farmer may begin at *f* (but no matter which ſide); and, laying off a nine feet ſpace, or half of what he propoſes for the breadth of his ridge, towards *h*, where

a pole is ſuppoſed to ſtand, he has only to raiſe the inſtrument to his eye; and, by reflecting the pole *g* towards L, may by ſignal fix one pole on the line L O at *i*; but this buſineſs may be done by marking at both ends of the line; and the furrows can be drawn afterwards. When matters are thus prepared, any boy who knows his right hand from his left can with eaſe keep two ploughs drawing the furrows, in the following manner. This method I commonly adopt in preference to every other. It is thus. Let *h i*, *k l*, *m n*, *o p*, repreſent the crowns of four ridges to be veered and gathered. Let one plough be ready to ſtart at *h* for *i*; and another at *l* for *k*. A pole muſt be previouſly fixed at *i*, and another at *k*; and the boy, by ſignal from the man at *h*, plants a pole at *q*; and, by a ſignal from the man at *l*, another at *r*; then both ploughs proceed till they have changed ſtations. The plough at *i* proceeds to *n*; and the pole-man places a pole in the line of *n m*; the one at *k* proceeds to *o*; and another pole is fixed in the line *o* and *n*; the poles *q* and *r* always ſhifting as occaſion requires. Thus the two ploughs proceed, till the whole field is ſtreighted off, and prepared for ploughing. The croſs furrows may be drawn by two ploughs the ſame way, after being marked.

It now remains to ſhow the method by which any farmer may, with the leaſt poſſible trouble, aſcertain the acres in any right-lined field.

Plant a pole at O, and another any where, as at Y, directly on the line of B O. Meaſure the line B O 20.24. Stand about R, looking through the optic ſquare to A; and, where the reflection from the poles Y O quadrates with A, place a mark where you ſtand. Place alſo a mark at Q, where theſe poles will be found to quadrate with L; and, having meaſured B O, walk to L with the chain. Meaſure L Q = 7.03, and R A = 8.67, which together, is - - - = 15.70 chains.
Half the diagonal B O - = 10.12

Their product is - - 158.884 ſquare chains.
And, by ſhifting the point, is - 15.884 acres,
or 15 acres, 3 roods, 22 falls. The meaſure may be eaſily aſcertained, though one or more of the ſides aſſume the form of L ‡ O. For L O × ½ Z ‡ will require to be added to the field comprehended within the ſtraight lines thus.

	A.	R.	F.	YDS.
Firſt or main figure meaſures -	15	3	22	0
And L O = 10.74 × ½ Z ‡, viz. 1.26 = 1.35324, acres, or = - - -	1	1	16	14
Total	17	0	38	14

One

One a little acquainted with meaſuring can reap great advantage from the uſe of this inſtrument, in meaſuring fields of *any form.*

I muſt now obſerve, that at firſt it requires ſome care and attention to diſcover the reflection of an object on the mirrors; but a little practice will make it ſo eaſy, that with one glance it will be ſeen; and the uſe of the inſtrument found to be both eaſy and pleaſant.

The inſtrument I have uſed for a long time was made by Meſſrs Miller & Adie, mathematical inſtrument makers, Edinburgh; and, being extremely accurate in its reflections, I can with confidence recommend theſe gentlemen for ſupplying all who wiſh to avail themſelves of ſuch an uſeful inſtrument. Indeed, without being accurately conſtructed, it is *good for nothing.* It requires very great attention to do this properly; they are done on the optical principle of the 'angle of incidence being equal to the angle of reflection.' At whatever part of the large aperture the rays are admitted, they are reflected upon a correſpondent part of the ſmall mirror; and the reflected image is always at right angles to the line of the reflected object from the eye. I am not perſonally acquainted with Meſſrs Miller and Adie; but I recommend them as optical inſtrument makers from actual experience; and believe they will not put one off their hands before it is capable of undergoing the ſtricteſt trial of its accuracy in the manner above preſcribed.

I am, Sir, your moſt obedient ſervant,

PHIL-OPTICUS.

P. S. I neglected to mention the method of proving the accuracy of maps.—Take any eminence marked in a *county map, for example,* (ſuppoſe a ſignal poſt). Every two places, which, with the optic ſquare, quadrate with that ſtation, muſt do ſo in the map. I have tried the map of this county, done by Mr Forreſt, and found it *uncommonly correct.*

[THE following ingenious remarks by the late Profeſſor Robiſon, on the Conſtruction and Hanging of Gates, were lately ſent us. It is unneceſſary to ſtate, that they were drawn up by the Profeſſor after Mr Parker's letter on that ſubject appeared in our Magazine.]

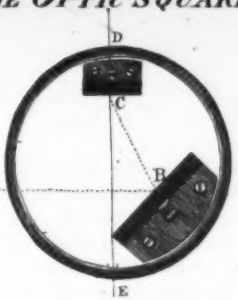
SIR,

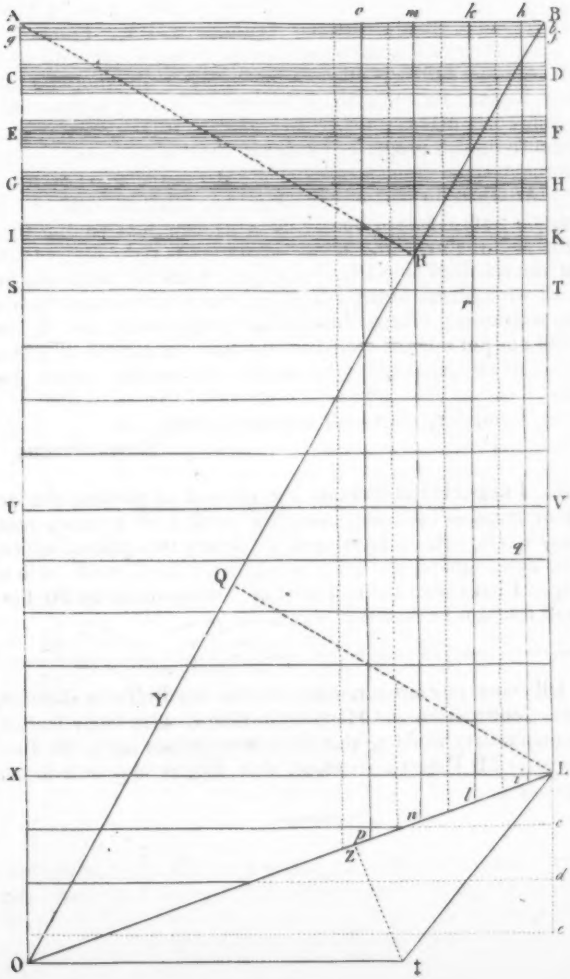
I HAVE conſidered the conſtruction of the gate mentioned Vol. IV. p. 180 of the Farmer's Magazine, with ſome care, and ſhall give you my opinion of it with great frankneſs. Many of the leſs obvious, and more delicate circumſtances of the conſtruction,

are

THE OPTIC SQUARE

A. Ray from an Object falling on the large mirror B. by which it is reflected to the small A mirror C. the under half of which is silvered. the upper part transparent. from C it is reflected to the Eye at E. where it is seen to coincide with the Object D seen directly through the transparent part of C.

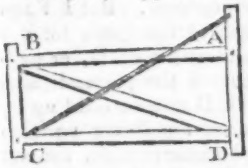




Engraved for the Farmer's Magazine

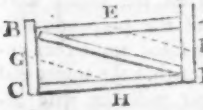
are very judiciouſly conſidered. They are ſuch as do not ſtrike the minds of country wrights, yet are of importance to its good performance. Such are the *preciſe* poſitions of the thimbles (as the author calls them), on which depends the gate's tendency to ſhut, and its ſhutting in all points at once—this conduces much to the durability of the gate. But it would have been eaſier executed by ignorant tradeſmen, if the meaſures had been properly given, without mixing ſo much mechanical reaſoning, which few will underſtand.

The great defect of the gate is, that its overhanging weight is not properly ſupported. The two rails, A B and D C, are of the ſame ſcantling with the uprights. The other pieces are only laths, to fill up the ſpace, and prevent calves, ſheep, and lambs, from getting through. Theſe two rails are mortiſed into the uprights. The whole ſtrain, therefore, is borne by the mortiſes A, D, and, in a very ſmall degree, by the mortiſes C, B. Now, unfortunately, it is in theſe joints that gates fail. Though put together in the drieſt ſtate, and the joints ſecured by daubing the tenons with a coat of white paint before they are put in; and though very hard driven in, yet it is well known that all timber work ſhrinks after working. The joints ſhrink unequally, and water gets in, and there lodges and ſoaks into the wood, and ſoftens it, and in time rots it; and the gate ſinks down at the end B C. More rails, mortiſed in the ſame manner, will make the gate ſtronger—but heavier, almoſt in the ſame proportion.



There are but two ways of preventing ſuch a gate from dropping at the end B C. The end muſt either be truſſed, by a diagonal brace from B to D; or it muſt be ſuſpended, by a diagonal tye from A to C. If either of theſe be done, the joints at the corners may be as moveable as the hinges of a door; and will only need a pin to hinder the mortiſes at A and C from being drawn out. Suppoſe the joints to be really hinges—then it is plain that, without a diagonal, the gate will hang thus; for it will take the ſhape of any oblique parallelogram.

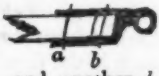
But now, ſtill ſuppoſing the hinges perfectly moveable, let there be a brace, B D, butting firmly on the upper rail, at B, and on the upright A D at D, it is plain that the point B cannot deſcend without cruſhing B D, or ſtretching A B; for, when the three ſides of a triangle retain their lengths, the angles remain unalterable. The



gate

gate drawn in the Magazine *seems* to have this ſupport; but it is only ſeeming; for the oblique piece B D is only a thin lath, which will eaſily bend outwards by a load laid on B; and, when once bent outwards, it will ſoon ſnap. In order that B D act as a truſs or brace, it muſt be firmly abutted on the heel of the upright A D, and on the under ſide of the rail at B, thus. This brace muſt be as thick as any of the rails or uprights. It will not be quite ſo ſtrong if abutted on the upright B C; and it then tends to puſh the head of the upright off from the tenon of the rail. Another brace, E F, will ſtrengthen the ſupport *considerably*. One at G F gives no help: it only ſerves to fill up an opening. But E F and G H are quite unneceſſary for the ſtrength of the gate; for it is impoſſible for the point B to ſink without ſhortening B D, or pulling the gate poſt on which it hangs, out of the perpendicular. The open triangular ſpaces A B D and B C D may be filled up by horizontal or perpendicular laths, planted on the ſtrong uprights and rails. Perpendicular ones are beſt; becauſe ſhorteſt, and not ſo flexible: Horizontal ones look better; but muſt be ſtiffened by two pieces, perpendicular, as in the Magazine.

The iron ſtrap, in the figure, which goes along the upper ſide of the upper rail, and is, in fact, the continuation of the upper thimble, will be of conſiderable ſervice in my conſtruction, if it go through the head B, and be firmly bolted to the upright B C; for it will prevent the tenon A from being drawn out of the mortiſe. But this ſervice will be as well performed by making the thimble of this form, embracing the head A of the upright, and about a foot of the rail; and having a bolt *a*, through the rail, and another *b*, through the upright, ſerving as a pin for the tenon and mortiſe. The long ſtrap is of no ſervice whatever in the conſtruction repreſented in the print.



The other way of ſupporting the overhanging weight of the gate, is by means of a diagonal *tye*; and this is the moſt obvious, the eaſieſt, the lighteſt, and the ſtrongeſt of all. An iron ſtrap, an inch broad, and half an inch thick, firmly bolted into the head A and the heel C, will ſupport a load of more than five tons laid on B. Therefore, a ſlender ſtrap on each ſide of the gate, bolted through it, will be the neateſt way of hanging it. Such a gate cannot droop at the outer end, even though all the joints were looſe, unleſs the upright poſt be drawn out of the perpendicular. The open ſpace of the parallelogram may be filled up, either horizontally or vertically, by laths. The higher that the upper end of this ſtrap can be placed at A, the ſtronger will the gate be. Therefore, it is a great advantage to have the upright A D a good deal

deal longer than the other. Nor does this make the ſmalleſt odds on the ſtrain on the gate-poſt on which it is hung: the ignorant only think otherwiſe; yet it is a very general opinion. The old-faſhioned form of a farmer's field-gate is ſtill by far the beſt of any; and has ſuch an expreſſion of its efficacy in its very form, that it appears more beautiful to me than any other. A landſcape painter ſhould never introduce any other. There is nothing to hinder all the niceties in Mr Parker's plan from being ſtrictly obſerved. I may juſt add, that this conſtruction (I mean a tye rather than a brace) is the only one that can be executed without a blunder by the moſt ignorant, and with the rougheſt materials; while, at the ſame time, it admits of every nicety of improvement. The country wright would do well to read the article *Carpentry* in the ſupplement of the Cyclopædia Britannica. There is much of it that he will not underſtand, indeed; but there is alſo much which he will perfectly comprehend. I have been too prolix in this diſcuſſion, perhaps; but I wiſhed to make things as obvious as poſſible to the moſt uninformed. I am ſo much occupied at preſent, that I cannot undertake to deſcribe what I think the beſt manner of forming all the minutiæ, and particularly the faſtenings of the different parts of gates of all kinds. Some other day I ſhall conſider the ſubject attentively, and ſhall let you know the reſult.

I am, Sir, your moſt obedient ſervant,

May 21ſt, 1803. J. Robison.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On the Winter Management of Cattle.

Sir,

The winter management of cattle is a subject of considerable importance to the practical agriculturist, as by its arrangement his annual gains are not only much influenced, but the quantity and quality of his manure also in a great measure regulated. Viewing the subject as worthy of some consideration, I crave your patience when offering the following desultory remarks upon the most approved methods of keeping cattle during the winter and spring seasons.

In the *first* place, the great body of corn farmers (and it is their management that I mean to notice) generally purchase their stock of cattle annually, and either feed them off with turnips, or keep them through the winter upon straw and a few turnips, till the grass season arrives. Doubts have been entertained by many

many people, whether it is most beneficial to stall-feed with turnips, or to keep the cattle in open yards, where they receive their food in troughs or boxes, and partake of air and exercise, which is always agreeable to every animal. Without investigating these points, it may be stated, that whether the last mentioned plan be or be not most profitable to the farmer, it is undoubtedly most conducive to the health of the animal, consequently better calculated to furnish the public with more sound and wholesome beef than what is supplied by the stall-feeders. But it must be noticed, that if cattle are to be fed in the yard, very few ought to be put together; perhaps more than six should not be placed in one lot; and care used to select these of equal sizes and tempers. From these things it will appear, that feeding in the yard has its inconveniences: in short, a great number of yards, or *courtines*, as they are called in Berwickshire, are necessary where this system is adopted upon any thing like the great scale; though, after all, it is attended with many advantages. In no other way can a large quantity of rich manure be so speedily and completely manufactured, especially on farms where straw is a plentiful article. So sensible of these things are many farmers who possess clay soils, that they often force a crop of turnips, merely for the purpose of converting their straw into dung, notwithstanding that, in their situation, a crop of turnips can rarely be cultivated with advantage.

In the *second* place, the practice of wintering cattle in the straw, that are to be fed off upon the pastures, or kept in the soiling yards through the following summer, has of late been vastly improved. Formerly, it was customary to give the poor animals nothing but straw; and a great point was considered to be gained, when they were preserved in the same condition through the wintering process, as when put into the straw yard. This, however, rarely happened; as the cattle generally fell off so much in the spring months, after the straw was dry, and deprived in a great degree of its nutritive powers, as to be rendered incapable of taking on flesh till their blood was completely renovated by a supply of grass. Hence, one month at least, and that at a time when grass was at its best, was usually lost, before the slightest improvement could be discovered; whereas, in the modern way of keeping cattle, improvement takes place from the outset; and they are much more speedily and effectually fattened in a few months, than was practicable under the former system, however diligently exercised.

If turnips are plentiful, the best farmers give cattle a tasting of them from the day they enter the straw yard; increasing the quantity as the season advances, or as the straw loses its nutritive powers.

powers. Perhaps two double-cart loads of turnips, weighing 15 cwt. each, or thereby, may do very well for the daily supply of a score of cattle, whose weight does not exceed thirty-five Amsterdam stones each: but, after Candlemas, three cart-loads will be required, in case circumstances permit such a supply to be furnished. If turnips are scarce, as often happens on clay soils, many farmers are in the habit of withholding green food till January or February; and if the cattle are regularly supplied after that period, the want of turnips through winter will not be sensibly felt, in so far as respects their condition when turned out to the pastures. But, with regard to the quantity and quality of dung, the want of turnip feeding is of incalculable loss: hence every farmer strives to grow turnips, though many, who attempt that branch of culture, are quite satisfied that it would be more for their interest, in the first instance, to clean the land by a bare summer fallow. In other words, a partial evil is submitted to, in order that a great advantage may afterwards be obtained.

If these loose remarks can be of any use, you are at liberty to insert them in your publication. And I am yours, &c.

ARATOR.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

On Human Exuviæ and Soil-Holes.

SIR,

IN adding to the hints of your correspondent *Glaucus*, in last Number, I do not think it necessary to follow him in his sort of half apology for commenting on stercbraceous subjects. It would be ridiculous to suppose that the readers of the Farmer's Magazine will regard any discussion as repulsive which is connected with the improvement of their art; and, in truth, none but the 'musty ideas' of 'nice people' will ever find any thing repellent in discussions (with due periphrasis, to be sure) connected with the Cloacinean Goddess. This letter then, Sir, (not to offend your more squeamish readers with calling things by their right names), will treat of human *exuviæ* and *soil-holes*.

Ideas similar to those which have been urged by *Glaucus* and by Dr Hunter in one of your early volumes, relative to the importance of collecting these exuviæ more carefully, have often struck me. There can be little doubt that the annual *ejectamenta* of an individual, if properly applied to an acre of soil wanting manure, would enable it to produce a quarter more of grain of any kind, than without this application; but, to be within the mark, let us say one fourth of this, or two bushels; the value of which we will call ten shillings. The amount, then, to which, by this application, the national wealth may be reasonably sup-

posed capable of being annually extended, is, in the whole empire, no less than eight millions of pounds. Now, what proportion of this manure may we conjecture to be at present profitably applied? In the country, doubtless, the greater part, and in many large towns a partial proportion. But, in some of our most populous cities, there is reason to believe that nine tenths of this manure is utterly wasted. On the whole, it may be fairly assumed, that not more than one half is profitably applied. By this neglect, therefore, a national loss of four millions is annually sustained. Is it not worth while to inquire how this may be avoided, even though at the risk of turning the stomachs of some over nice readers?

The first question to be resolved, is, In what way are the human exuviæ of our great cities wasted? Generally, of course, by being conveyed into the common sewers, and from thence to fatten the *fuci* in the ocean, instead of augmenting the produce of our fields and pastures. The *bogs* of London seem commonly to communicate with the sewers: but I confess I was always puzzled to guess whither the pipes of the *water-closets*, now so frequent, are conveyed. I conclude, however, to the same quarter.—How is this waste to be remedied? The rich will doubtless continue their water-closets. If they communicate, therefore, with the sewers, their contents must be wasted. The *bogs* might perhaps be abolished, and more economical repositories provided. The mode may be best explained by detailing the practice in this respect at a neighbouring town, where there are not, I venture to say, ten cart-loads of human exuviæ wasted in a twelvemonth.

In Hull, the place I allude to, every house is provided with a soil-hole. This is a *sine qua non* to the meanest tenement, and the very first *desideratum* that a builder considers essential. None of these communicate with the sewers. They are usually very small, and with but one seat; in the front of which is an opening, closed in common by a square board, which fits pretty accurately, and is fastened by two wooden buttons or nuts. The button is made to slant a little towards the back of the building; but is rarely more than a few inches below the floor. Into this seat all the ashes made by the family are constantly thrown. The consequence is, that the exuviæ are so completely neutralized, that no offensive smell is felt, though they are often built close by the back-doors in very confined yards. The dustmen, as they are called, of whom many have accumulated considerable fortunes, send their carts and men every two or three days, to clean out these soil-holes. This is effected by merely opening the front board, and shovelling the contents into a tub, which is emptied into a cart. So completely is every thing fluid absorbed by the ashes,

ashes, that no dirt is made by this process, nor is it at all offensive to pass one of these carts in the street:—you merely see what appears to be a load of ashes. This manure is eagerly bought by the adjoining farmers; and often shipped and sent up the rivers to a great distance. Of course, the price is high; and the dustmen consider it a *favour* to be allowed to clean out a soil-hole gratis. They never think of demanding money; and often, I believe, *give* a gratuity to the servants. How should they do otherwise, indeed, when they sell this manure for six and seven shillings a cart-load of about a ton? This price I paid some years ago for two lighters-full, the freight of which was as much more. Now, I believe, it is higher. As a proof of the value set upon manure at Hull, it may be stated, that the Magistrates have more than once published threats of punishment to those who should secretly *sweep the streets*, to the injury of the scavengers who had contracted to clean them; and that there is quite a competition amongst children with wheelbarrows, and old men with carts and asses, who traverse the town, carefully sweeping up every heap of horse-dung casually dropped.

The general adoption, in large towns, of the practicable system above detailed, would fully answer the wishes of *Glaucus*; would create a vast annual accession of national wealth; and would supplant the '*ha'd your hand*' nuisances which are experienced in some places. Still, however, a vast quantity of valuable manure will always be conveyed to waste down the sewers of a large city. To turn this to account, the plan proposed by Dr Hunter is very feasible. Let the outlets of such sewers be surrounded with reservoirs constantly furnished with a succession of absorbent materials, that would drink up the precious fluid as fast as it arrived. Nothing could make better manure than such a saturated mass.

I approve highly of Glaucus's plan for building public soil-holes: there should be such in every large town. That they might be kept clean, they should be superintended by some poor person; and a fee paid for entering them. In such a place as London, where the inhabitants are often for half a day at a distance from home, I know of few greater accommodations that could be proposed, than to have a range of such buildings in the neighbourhood of every great street. That they would pay admirably, I have no doubt. A traveller in France during the late peace, told us, that such erections exist in Paris; and that they are quite a fortune to the proprietor. The difficulty, in such a place as London, would be to find suitable stations: but this might be got over. They should not, of course, be in front of a good street, but down some adjoining lane or alley, over which a sign, inscribed, 'To the Cloacinean Temple,' would give the

necessary information in unobjectionable language. For, with all our delicacy, Mr Editor, it is not things but *names* that offend us. A fine lady can talk about her lover's *inexpressibles*, when she would faint to hear of his breeches; and, by means of a little similar periphrasis, the most gross actions may be mentioned without offence in very refined society.

If such accommodations be wanted in London, what must they be in Edinburgh? I never talked with an English traveller who had visited Scotland, that did not represent the want of *temples*, in which he could offer up his vows to Cloacina, as one of the most serious miseries that befel him. A friend of mine assured me, that, on this very account, he walked, rain or fair, every day of a whole year which he spent in Edinburgh, to Leith; on the pier of which I understand is a suite of these buildings. Another friend told me, that these desiderata constantly marred the otherwise extraordinary pleasure which he derived from a tour through Scotland; and that nothing could equal his horror, when, at Lord B——'s, and troubled with an intestinal commotion, to be told, in answer to his inquiries for a water-closet, 'that the gentlemen usually went behind yon hill,' pointing to a spot two hundred yards distant. These may seem petty miseries; but these little things are great to little men; at least to those who at home cannot enter the meanest cottage without finding the accommodation which Lord B——'s country-seat denied. This, however, has reference to a part of the question on which I do not mean to dwell. But it is very obvious, that an immense quantity of valuable manure might be obtained by the general erection of these buildings in great towns.

Not less profit would accrue from making cisterns at the corners of every street for the reception of urinary *ejectamenta*. I know not how it may be in Edinburgh; but in London a man may sometimes walk a mile before he can meet with a suitable corner; for so unaccommodating are the owners of door-ways, passages and angles, that they seem to have exhausted invention in the ridiculous barricadoes and shelves, grooved, and one fixed above another, to conduct the stream into the shoes of the luckless wight who shall dare to profane the intrenchments. It has often struck me, while laughing at these ingenious contrivances, that the money which they cost, if expended in the erection of cisterns, would have answered the same end, in preventing a nuisance, and would have saved a vast annual source of wealth.

In concluding, I wish to ask *Glaucus*, or any of your correspondents, if the experiment has been tried, whether human exuviæ are the most active manure in a dry or wet state. Of course, I should have concluded the latter, did not the Chinese, who are pretty acute in these points, often use them in the former

mer state. Perhaps this is done when the land lies at a distance, to save carriage; and the same consideration, if the manure is as effectual, would often be of great importance in this country.

I am, Sir, your most obedient Servant,

COPROPHILUS.

B———, near Hull, Oct. 9th, 1809.

FOR THE FARMER'S MAGAZINE.

Observations on the Causes, Prevention, and Cure of the Foot-Rot in Sheep.

Of all the animals with which Divine Providence has stored the world for the use of man, none are more innocent, more useful, or more profitable, than the sheep. To this valuable animal we are indebted both for food and clothing; and the manufacture of its wool furnishes employment to millions of the community. In short, it would be difficult to specify a single luxury or convenience of life to which this useful animal does not contribute a liberal proportion. Inasmuch as the stock of domestic animals in a country is justly esteemed one of the principal sources of its wealth and prosperity; and every circumstance that materially tends to diminish their number, or to decrease their value, must be attended with positive loss to the community,—inquiries regarding their diseases, and the means of their prevention and cure, are subjects peculiarly entitled to public attention and encouragement.

Those who are supposed to possess the best opportunities of information, have calculated the number of 'fleece-bearing animals,' in Great Britain and Ireland, at about thirty millions; and that, of these, from three to four millions annually die of disease. The annual loss, at an average, from this cause, may thus be safely estimated at three millions Sterling! A loss of such serious importance to the community, imperatively demands, that every possible encouragement should be held out for discovering remedies best calculated for the prevention and removal of the various maladies to which this valuable animal is subjected, with whose welfare our unrivalled commerce and national glory are so inseparably connected.

'Les plus grands medecins,' says Daubenton, 'doivent rechercher avec soin le cause et le remède d'un mal, qui menace de detruire des animaux utiles à toutes les nations; et principalement à celles qui savent employer la laine pour les plus beaux ouvrages.'

Should the following hints regarding the causes, prevention and cure of the foot-rot in sheep, in any way tend to promote this laudable design, the writer will be satisfied that he has not 'laboured in vain.'

Foot-rot is a suppuration in the glands, between and above the hoofs of sheep; and bears a very striking analogy to chilblains in the human species. It commonly affects the fore-feet, but sometimes extends to all four. The external part of the hoof is the usual seat of the disease: an acrid and fœtid humor exudes from the cleft, which corrodes the flesh, and sometimes even the bone. When unchecked in its progress, the inflammation around the hoof becomes black, and degenerates into a foul and tedious ulcer, occasioning excruciating pain to the animal, not only rendering it lame, but forcing it to walk on its knees; and, in many instances, the hoofs drop off altogether. It is seldom observed on dry, clean sheep-walks; but, on the contrary, is most troublesome on wet, soft and dirty pasture. This disease appears most frequently in the month of August; very seldom during the winter or spring; and is more frequent among long than short-woolled sheep. It may, however, occur at any season, if the animal is frequently exposed to the vicissitudes of heat and cold, and the sudden alternations of wet and dry pastures.

Cause of the Distemper.

With respect to the proximate cause of the foot-rot in sheep, there have been various opinions. It has been imputed to a peculiar acrimony, of which, however, there is no evidence; and the consideration of the remote causes, the symptoms and cure, render it extremely improbable.

Others, who cannot find either evidence or reason for supposing that the disease depends on any change in the state of the fluids of the animal, have, with more probability, concluded that the proximate cause of it is, the sheep being kept on a wet soil, and by feeding alternately on wet and dry ground, in warm weather, with the common exception of salt-marsh and peat-moss, where sheep are seldom subject to the foot-rot.

But, from whatever cause or causes this disease may originate, the means of prevention and cure are the great and primary objects of investigation.

Prevention and Cure.

On suspected grounds, Mr Lawrence, in his treatise on cattle, judiciously recommends constant and careful examination; and, when any fissures or cracks, attended with heat, make their appearance, to apply oil of turpentine and common brandy. This, in general, produces a very beneficial effect; but, where the disease has been long seated, and become, in a manner, confirmed, —after cleansing the foot, and paring away the infected parts, recourse is had to caustics, of which the best seem to be sulphuric acid and the nitrate of mercury. After this, pledgets are applied,

the

the foot bound up, and the animal kept in a clean, dry situation, until its recovery is effected.

But it often happens, where the malady is inveterate, that the disease refuses to yield to any, or all of the above prescriptions.

The following mode of treatment, however, if carefully attended to, may be depended upon as a certain cure. Whenever the disease makes its appearance, let the foot be carefully examined, and the diseased part well washed, and pared as nigh as possible not to make it bleed; and let the floor of the house where the sheep are confined, be strewn three or four inches thick with quicklime hot from the kiln; and the sheep, after having their feet dressed in the manner above described, to stand in it during the space of six or seven hours.

In all cases, it is of great importance, that the animal be afterwards exposed only to a moderate temperature—be invigorated with proper food—and kept in clean, easy, dry pasture; and the disease will be effectually remedied in the course of a few days.

G. F. H.

Edinburgh, 2d Oct. 1809.

FOR THE FARMER'S MAGAZINE.

Letter from W. Richardson, D.D., late Fellow, Trinity College, Dublin, to Thomas Allen Esq., containing Facts and Observations relative to the Variety of Irish Grass called FIORIN.

SIR,

IN compliance with your request, I shall throw together some facts and observations on the subject of our Irish *Fiorin Grass*, (whose luxuriance you admired so much at PORTRUSH in the course of your late tour), selecting, as well as I can, such circumstances as I have slightly or not at all touched upon in my former publications relative to this very extraordinary grass.

The attention shown to such of these as have already reached your country, is very gratifying; and the experiments making upon fiorin, or rather the attempt to cultivate it about EDINBURGH, are to me highly flattering, and lay me under an obligation of aiding such spirited efforts with every cooperation in my power.

The condition I lay myself under of searching for *new* matter, must necessarily make this communication somewhat desultory; but, even so, should you think fit to present it to the FARMER'S MAGAZINE, I readily consent.

PORTRUSH FIORIN CROPS.

I shall commence (for the encouragement of those who live in bleak situations) with the history of the stripe of meadow I showed you at *Portrush*, little more than one hundred yards from the rocky shore of the Northern Ocean.

The ground, raiſed by Nature a little above the level of the meadow, which I had got poſſeſſion of five or ſix years ago, was ſo light, dry and poor, that, in 1805 and 1806, I did not conſider it as worth mowing, but left its crop ſtanding, to be eaten with the aftergraſs with the reſt of the meadow, when my cattle ſhould be turned in.

In the year 1807, deſirous to bring this unproductive part of my field into a profitable ſtate, I planted potatoes in it with the uſual quantity of dung; and when they were dug out late in September, laid it down with fiorin, having juſt at that time acquired ſome knowledge of the great value of this newly diſcovered graſs.

Late in September 1808, the ſtripe was mowed; and I then publiſhed, in an addition to the memoir honoured with a medal by the BOARD OF AGRICULTURE, the mower's affidavit, that it was the fineſt meadow he ever cut; and alſo the teſtimony of the Magiſtrate who adminiſtered the oath, that the crop ſeemed double the quantity uſually had on ſo much ground.

The ſame perſon has juſt now mowed it again, and thinks the preſent crop much better than that of laſt year, though very different; the ſtrings which compoſe the preſent crop being little more than one third of the length of thoſe he had cut before; but the deficiency in the length of the ſtrings of the ſecond year was more than compenſated by the prodigious increaſe of their number. The hay is now, September 23d 1809, in lap cocks; and the country people, who come to ſee it, are fully ſatisfied that I muſt have carried in hay at night from another place, to increaſe the quantity, for bravado.

The ſecond ſtripe at right angles to the former, whoſe ſhaking mat and enormous ſtrings ſurpriſed Mrs Allen and you ſo much, was circumſtanced and cultivated in the ſame way the following year. It was laid down in the middle of September 1808, in the preſence of EARLS O'NEIL and GOSFORD, then at my houſe; both theſe noblemen being anxious to witneſs the proceſs of laying down fiorin graſs, which, by that time, had acquired conſiderable celebrity.

Your inquiries were particularly directed to the proper ſeaſons for laying down a graſs, the accounts of whoſe enormous produce had ſometimes reached you in print, and of which you are now a competent judge yourſelf.

PROPER TIMES FOR LAYING DOWN FIORIN GRASS.

I have, on different occaſions, ſtated that fiorin graſs will thrive well if laid down with roots or ſtrings any day in the year.

I was certainly right, when looking only to the graſs itſelf; but, when crops are our object, other circumſtances muſt be taken into conſideration, and we muſt inquire what are the periods

of

of its enemies and competitors, and when will fiorin graſs encounter them at the greateſt advantage.

Here we muſt ſpeculate *a priori*, and look to the ſeparate natures of the rivals contending for poſſeſſion.

Fiorin is in perpetual vegetation; while the other graſſes and weeds it has to contend with, have only their paroxyſms of growth, and their periods of torpor.

Let us avail ourſelves of theſe oppoſite habits, and put down fiorin, when the powers of its competitors are not in action, and it probably will have acquired vigour enough to overpower them when they reſume their efforts, at firſt feeble.

I ſhall illuſtrate this by example.

Aware of the importance of the point to which you direct your inquiries, I determined to aſcertain it with preciſion; and in 1808, as I dug my potatoes; from the 1ſt of Auguſt, I, every third or fourth day, dreſſed and laid down the ground with fiorin ſtrings and roots, every one of which came on well; but unfortunately ſo did its ſpontaneous competitors.

I interfered and wed, but in vain; the promiſcuous vegetation came on with vigour; and the ſeedling graſſes were not diſtinguiſhable from the naſcent ſprouts of the fiorin.

Thus, though a ſingle root of fiorin had not failed, its rivals had got on ſo much better, that early in *July* I was obliged to mow an indiſcriminate fleece, of which the predominant graſs was *Holcus lanatus*.

What was put in later produced a very different reſult, viz. the magnificent crop I have mentioned, excluſively FIORIN. The reaſon is obvious;—the middle of September is (at leaſt in that harſh climate) too late for ſpontaneous vegetables to come forward with ſucceſs; of courſe, the fiorin was left in excluſive poſſeſſion until ſpring.

To return to your queſtion. I conſider, from the above and ſimilar obſervations, that the beſt months for putting down fiorin are *October*, *November*, and *December*; ſome of my fineſt crops were laid down on the 18th of the preceding December.

In *January*, *February*, and *March*, fiorin will come on well; even put down in April and May, if carefully wed, it will, in rich ground, give a tolerable crop that year.

FIORIN SEED.

You aſk, Does not fiorin graſs produce ſeed? and, if ſo, why not propagate by ſeed as with other graſſes?

Seed, no doubt, and in the greateſt abundance is produced; but the young tendril is ſo diminutive, and ſo ſlow of growth, that it is nearly impoſſible to protect it from weeds and other graſſes which do not mark their ſpecies early. With much difficulty I reared two or three ſmall ſpots from the ſeed; but, in extenſive practice, ſeed is inadmiſſible.

SOILS

SOILS FIT FOR FIORIN CULTURE.

You were surprised at a position you had met with in some publication of mine, *that fiorin throve equally in all soils, the wettest and the driest.*

The term *equally*, in strictness, may have been improper. I meant equal health, but certainly not equal luxuriance.

I can confirm my revolting position by strong facts.

October 1806, in forming a new *hortus irriguus*, for experiments in irrigation, my dam flooded a ditch, containing many fiorin roots, not one of which was destroyed; they still continuing to send up their strings to the surface, after being covered for three years by water 20 inches deep; and they are carefully preserved for inspection.

Again, in April 1807, I planted a fiorin root on the top of my garden wall, ten feet high. At the time, I put some little earth about it, but never watered, or even approached it since; yet it has continued for three years in good health in that dry situation. I often, indeed, find fiorin roots growing on the rough sides of old walls, and particularly at the deserted Castle of BENBURB near me, and on Earl O'Neil's park wall.

In practice, through an extensive and much diversified farm, I have not yet found a single spot so wet, or so dry, that fiorin may not be (or rather has not been) cultivated to advantage on it.

I do not possess any light, loose, dry, sandy soil; yet am sanguine enough to expect, that a valuable crop of fiorin hay might be obtained from such ground, after a slight top dressing, tolerably rich; and I earnestly recommend the experiment to the possessors of such land.

That fiorin will *grow* there, *Nature* tells us in the most convincing manner; for its panicles, at this season, abound on every spot of the description. That it will be *luxuriant*, if *kept* in exclusive possession, and effectually protected, I speculate thus.

Our common meadows, whose hay is chiefly composed of the *stalk* bearing the panicle, come to their period of perfection between the inflorescence and the ripening of the seed, mostly in *June* and *July*; then their vegetation ceases. Their luxuriance, of course, depends much on the quantity of rain that fell in *May* and *June*; and when these months happen to be dry, our hay crops fall off greatly.

Fiorin crops depend on circumstances totally different; for though the panicles of this grass are very abundant, and come forward in *July*, it is not upon them we depend for our crop: it is on the *strings*, or *stolones*, infinitely more abundant, and of far superior quality.

But the periods of vegetation of the *stolones* is very different. Their greatest paroxysm is in *September*. I think they vegetate rather

rather more in *October* than in *August*. They increase their length a good deal in *November*, and continue growing through *December*.

Hence I expect it will follow, that in the driest, and even sandy ground, the fiorin strings will find moisture enough at the latest periods, in which it has pleased Nature to call their powers into action.

SEASON FOR MOWING FIORIN, AND MAKING IT INTO HAY.

The late growth of the *stolones*, in which the value of the fiorin hay *exclusively* consists, induces the necessity of mowing at a very late period; and fortunately, Nature has endowed those strings with powers wherewith to brave the severities of the season to which they must necessarily be exposed, during the process of converting them into hay.

You ask me, At what time I *really* intend to mow the 14 acres of fiorin meadow I have now standing?

My positions relative to winter, and even spring hay-making, have been deemed so revolting, as greatly to discourage fiorin culture, and have stopped many who otherwise would have engaged in it.

Hence, to prevent the ill effects of so general a prejudice, I found it necessary to establish the *facts* supporting this new practice, by irresistible evidence; and to demonstrate the existence of the cause upon which this curious property of fiorin depends; and to deduce, from uncontroverted principles of natural philosophy, that this effect necessarily follows from the cause whose existence I have established.

I have precluded myself from recurring, in this letter, to former publications; and therefore confine myself to a direct answer to your question.

The answer is to the same purport with a notice which I published last year in my own country, and have lately sent to England, viz. *That I would mow and make hay on the first and fifteenth of every month, from October to March inclusive;* and that I would take care to have hay in the field, exposed to the weather during that whole period.

I commence mowing this year somewhat earlier; and, as I must soon leave the northern shore, I began to cut my Portrush meadow, September 25th.

You saw it four or five days before, and can bear testimony to its high state of vegetation. I made you remark the surface bristling with innumerable green points, like the teeth of a flax hackle; every one of them in full growth, adding rapidly to the length of the string, of which I showed you that it formed the point; of course, that I lost much in quantity by so early mowing.

On the 1st of *October*, I shall cut the fiorin in my plantations, orchards

orchards, that close under hedges, and, in general, whatever is exposed to have its hay adulterated by falling leaves.

October 15th, I shall mow my irrigated fiorin, allowing full time to make it into hay, and to take it off before November 10th, when I wish to let in the water.

I shall mow the rest, as suits my convenience, on the 1st and 15th of the succeeding months; promising to your countrymen, as I did to the English, that whoever comes, or *stands* to inspect my proceedings, shall have fiorin roots, strings, seeds, and full instructions on every process relative to it; and also be taught how to know it *at home*; where, I can assure them, it is the *most* common grass with which Nature has clothed their country.

Quantity—Amount of Fiorin Winter Crops.

For the *quantity* and the *quality* of my fiorin crops, I muſt refer to the printed defence of my ſanity, which has been often impeached on account of my paradoxical poſitions relative to this graſs.

You will ſee there, that it was proved, before the Earl of Gosford and Lord Viscount Northland, by the oath of the perſon who aſſiſted me in meaſuring the ground and weighing the hay, that one portion *not* manured the preceding year, produced at the rate of *ſix* tons the *Engliſh* acre; and that another portion which had been manured, produced at the rate of 7 tons, 4 hundred, 1 quarter, and 8 pounds; that the hay, when weighed, was dry, rattling, and merchantable by *weight* between man and man; the two noblemen certifying, at the ſame time, for the ſuperior quality of the hay.

Winter Green Food.

Should the enormous quantity and great value of fiorin crops prove inſufficient to tempt your countrymen to venture upon Chriſtmas hay-making, there is another moſt important uſe to be derived from fiorin graſs, which relieves them from the neceſſity of encountering ſo formidable an operation; that is, an inexhauſtible ſtock of winter *green food*, which can be mowed *daily* for their milch cows.

Though I have preſſed this topic in different publications, I muſt, in this inſtance, deviate from my rule of ſeeking new matter, and earneſtly recommend the culture of fiorin in Scotland, had it nothing to recommend it but this ſolitary advantage.

I do not proceed upon mere ſpeculation; the value of fiorin, as a *winter* green food, is eſtabliſhed by practice. Two years ago (1807) I tried it on a ſmall ſcale, with complete ſucceſs. Two acres of this graſs *laſt year* (1808) left me (after my hay experiments) a conſiderable quantity for my milch cows, which, while it laſted, both enriched their milk and increaſed its quantity; for

this

this year I have an abundant ſtock; and, probably, during the reſt of my life, my cows will not taſte *dry* hay.

Here is an additional motive for inſpecting my proceedings; thoſe who are not diſpoſed to believe my ſtatements upon the quantity of my fiorin crops; and thoſe who are obſtinate in denying the poſſibility of ſaving hay in the midſt of winter, may be curious about this *new fact*, and willing to aſcertain the exiſtence of a valuable winter green food of ſuch eaſy acquiſition.

PROCESS OF MAKING HAY AT CHRISTMAS.

I ſhall conclude by replying to a queſtion, which you, as well as many others, have often put to me.

By what proceſs can I ſave hay in the three winter months, when, excluſive of the deluges of rain and falls of ſnow to which it muſt be expoſed, evaporation is rarely in action;—a ſeaſon, during which the atmoſphere is rarely diſpoſed to abſorb moiſture, but is generally parting with what it holds diſſolved?

I was not ſo hardy as to ſpeculate *a priori*, upon the ſucceſs of ſo unuſual a practice. The facility of ſaving fiorin hay *in winter* I diſcovered by accident, as I have detailed minutely in a memoir publiſhed in the Tranſactions of the BELFAST LITERARY SOCIETY; and it was ſome time afterwards that I diſcovered, and ſtated to the world, the *principle* upon which this curious property (peculiar to fiorin hay) depends. I cannot now go over the ſame ground again, but ſhall proceed to what I have not ſtated before, viz. *my mode of making hay in winter.*

To look for a fine day at that ſeaſon might be vain, and to wait for it where the quantity of hay is conſiderable, muſt be inconvenient; beſides, the cloſe *flat* ſoil of this graſs is always ſo wet, that rain, at the time of mowing, could not make it worſe; but, from the length of the ſtrings, it riſes from the ſcythe ſo rough in the ſward, that the air has a free paſſage through it, and alſo in the lap-cock; nor in either does it receive injury, though it ſhould be expoſed for weeks without turning.

I open out the hay in the firſt ſtirring wind, which ſoon carries off its exterior damp, whether it came from rain, or was acquired while lying flat on the ground. As for its own *internal* juices, I am anxious to retain them.

As ſoon as the *ſurface* is dry, I hurry the hay into lap-cocks, when I conſider it ſafe from all danger.

In the next wind (after a week, and I care little how much longer) I open the cocks for half an hour to let the air paſs through them; hurry eight or ten of them into a large cock, in which it will ſtand the winter ſafely; but, as wind might ſcatter it, I conſider it more prudent, in another windy day, to throw it into cocks as large as men can build, without treading. Theſe, ſecured by two ropes (eaſily made from the long ſtrings), will certainly

ſtand

ſtand ſecure until wanted for houſe or other conſumption, and need not be removed from the place where they ſtand, as their ſurfaces will not bleach, nor their bottoms rot, as happens in other hay-cocks.

Thus a moſt troubleſome and expenſive part of the proceſs of ſecuring our hay will be ſaved; I mean, that of bringing it home, and putting it into large ricks; an operation, during which, the farmer's whole ſtock of hay is much expoſed to the weather in late and uncertain ſeaſons; and alſo to another ſerious danger, that of heating in the rick.

Theſe advantages may help to compenſate for the loſs of *aftermath*, which, in ſiorin meadows, is neceſſarily given up; but the real compenſation lyes in the enormous quantity, and the ſuperlative quality of the hay itſelf.

Should the Conductor of the FARMER'S MAGAZINE honour this communication from another country, with a place in his collection, I ſhall cheerfully reply, through the ſame channel, to any inquiries that may be made relative to this graſs, whoſe *value*, at leaſt, is a new diſcovery, and whoſe great ſuperiority over other graſſes is more ſtrongly marked in our very *worſt*, than in our *beſt* grounds. I am, Sir, your very humble ſervant,

Moy, Ireland. W. RICHARDSON, D. D.

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Plan for deſtroying Foxes, and for relieving Country Gentlemen from the great trouble, hitherto taken by them, of freeing the Country of theſe animals.

SIR,

NONE of your correſpondents have hitherto deemed it of importance to addreſs you on the ſubject of deſtroying foxes; nor, indeed, has any plan been reſorted to by farmers, for the purpoſe of exterminating that hated vermin; though they all, I dare ſay, are ready to admit, that they are liable at times to loſe a chicken, an irreparable loſs to the miſtreſs, or even a ſickly twin lamb, a vexatious circumſtance to themſelves and ſhepherds, from their depredations. This careleſs indifference of farmers is the more unaccountable, as they have a generous example from landlords, who, at incalculable expenſe, maintain ſervants, hounds, and horſes, for the ſole purpoſe of protecting their tenants from the inſidious attacks of theſe cunning animals. It is true that many of the latter claſs conſider the vaſt expenſe and trouble of the former, diſproportioned to the end; and complain that they ſuffer more real injury in one year, from the intended benefits of landlords, in this inſtance, than could be expected from the

thefts

thefts of foxes in the course of ten years, were they permitted to multipty without molestation. But gentlemen cannot be blamed: they act from the purest motives; and are incapable of potching fields of young wheat and grass; of breaking down fences; of unhinging gates; and of disturbing sheep and cattle, for the sake of an hour's amusement. The generality of them are so well acquainted with rural affairs, that they would rather lose their labour and trouble, than commit any serious trespass: but they are usually followed by a parcel of idle fellows from towns and barracks, who are so ignorant, that they scarce know clover from heather; and such indifferent equestrians, that, far from being qualified to throw the ditch and fence behind them, they stop at every gate, break and unhinge it if it will not open, and pull down stone walls, over which they have not courage to follow their rural leaders. It becomes farmers to unfold the truth to their landlords, that they may no longer remain in error, incurring great expenses, to the injury of the very persons whom they wish to serve; and to adopt some plan of their own, for relieving their well-wishers of the eyesore of seeing an occasional twin lamb, or a wandering chicken, fall a prey to the midnight thief. Landlords have already contributed more than could have been expected of them; and are so generous in other respects, that they protect farmers from the annoyance of game, without permitting them to share in the trouble, lest their attention should be withdrawn from professional pursuits. An association might easily be formed by farmers, to meet occasionally with greyhounds, in order to surround covers; when they would, in all probability, destroy more foxes in one day, than are killed in the usual way in a season. It ought then to be an invariable rule, to burn all covers, that, from want of convenient concealments, the parents may be prevented from increasing the species. As many might still escape, the association could offer rewards for destroying them. Ten shillings for every one; twenty for every brood; five guineas additional to the diligent few who may kill a dozen in a season; and twenty guineas to those who may kill a score. By adopting some such plan, an enormous expense would not only be saved to the country gentlemen, which they, with their usual liberality, might employ in some useful public undertaking; but the farmers would be great gainers, their live stock being permitted to range the pastures undisturbed, gates and fences not being subject to the liberties of those who, though keen sportsmen, are but unskilful riders, and their fields not being potched in wet seasons by men who are little aware of the injury they do to agriculture.

October, 1809. B.

BRANCH

BRANCH II.

Review of Agricultural Publications.

A System of Sheep-grazing and management, as practised in Romney Marsh. Illustrated with Plates. By Daniel Price of Appledore in Kent. London, Phillips. 487 pages, 4to. 1809.

We are always well pleased to receive instructions respecting the management of live stock from our English neighbours, who, certainly, in many districts at least, excel in that branch of rural economy. We therefore opened this two guinea quarto with avidity; and, examining the title-page, expected to find the management practised in Romney Marsh to be the very first in the kingdom; more especially as, in turning the leaf, we observed that the work was approved by Sir John Sinclair, and therefore dedicated to him. Still, we were surprised at the title of the book, although it cost us two guineas; and shrewdly suspected, while turning over the table of contents, that the author had *made a book*, instead of detailing the actual management of a particular district. Our suspicions were strengthened after perusing the contents of twelve chapters, when, having ascertained that the book was rather a critique on the Romney Marsh management than a recommendation of it, we became quite crestfallen, thinking that the disagreeable task of reviewing a reviewer had devolved upon us. However, we proceeded to read the work itself; and, after giving a short description of Romney Marsh, shall record our observations in the order they were made.

Romney Marsh lies on the south coast of the County of Kent, being about 10 miles in length from east to west, and nearly 4 miles in breadth from south to north. The district contains about 24,000 statute acres, partly of a rich alluvial soil, whilst the remainder is of different varieties, some of it being peat earth, though the whole is well calculated for carrying grass, and is generally employed in the breeding and feeding of sheep. A small quantity of the ground is, however, kept under the plough; but the richest fields are constantly preserved in grass, yielding, in that way, handsome returns to the occupiers. The district not being healthy, is thinly inhabited. Excepting the villages, and these consist only of a few houses built near the churches, there are hardly any other houses interspersed in it; and the inhabitants of these villages, are chiefly people hired to look after live stock, the owners of which mostly live in the neighbouring towns, or in the upland country. In short, though Romney Marsh is a valuable tract of

country,

country, its real value is not yet ascertained, nor will it be ascertained till a different system is adopted. Besides the district usually called Romney Marsh, there are other districts contiguous, of similar soil, and nearly under the same management. The whole may be calculated at 60,000 acres; two-thirds of which are employed in breeding, the other third in fattening live stock—chiefly sheep. Indeed, from the earliest period of our history, sheep-grazing has been extensively carried on in Romney Marsh; though, as turnips and other winter crops were seldom cultivated, it is plain that sheep could neither be reared nor fattened with the same advantages as in those districts where a different system of management was adopted. Having given these general remarks, it is now time to examine more particularly the information communicated by Mr Price in the publication before us.

The greatest part of the first chapter is taken up by a story that has been told times without number. Buffon and others are freely quoted, and criticized. Wild sheep and tame sheep are exhibited to ascertain the difference between them. We hastened over this ground, and were galloping through the trite description of the uses of a sheep, but were arrested by the following curious statement, p. 12. 'After having served us for food, the skin employs the feltmonger, and is afterwards fabricated into parchment.' The taste of the Romney Marsh people must be very extraordinary, when the skin serves them as food; and the skill of their feltmongers must exceed that of all the chemists on earth, when they can manufacture parchment from excrements. Such is the only mode of explaining the sentence. If the author meant some other thing, it is unpardonable in an Englishman to be unable to express himself in his own language, and expose himself to the criticism of Scotsmen.

In noticing the varieties of sheep, Mr Price observes, that there is no chance of the wild and tame breeds intermixing. That they will not probably associate is true; as we often observe sheep of the same variety keeping separate when introduced among a strange flock. But, when the sexual appetite is roused, there is no nicety: even an Argali tup will nimbly descend from his rocky pastures, to court a greasy Bakewell ewe, or a genteel Royal Merino.

Speaking of selection, the author observes—'But selection alone will never preserve the form and shape, if the constitution be injured by starvation, perseveringly persisted in, as is now the case in Romney Marsh, especially with the lambs which graze on the hills in winter, and uniformly acquire that form which constitutes the characteristic of degeneracy.' Here, we humbly confess, we shut the book with something like passion, and exclaimed—Is it for this our two guineas are gone? Alas! they are thrown

to the cocks, though many a good dinner they might have procured for us. Vile title-page! why did you not inform us that, for two guineas, we would be told that the ſyſtem of management in Romney Marſh was execrably bad? No wonder that the Romney Marſh people have nothing but ſkin to eat, when there is no fleſh on their ſheep! Here paſſion gave way to pity, and we proceeded to open the book, and move on; and, though one or two little interruptions occurred, we had the virtue to proceed through nearly ſix pages, when we were told 'Mr Bakewell has ſaid to them' (the graziers of Romney Marſh), 'plough, and raiſe artificial food.' But they replied—'No: we object to trouble and expenſe.' Such an anſwer is extremely ridiculous, and warrants us to conſider the title-page as a mere impoſition. But we proceeded to ſearch out ſome of the author's opinions, reſolving to go on quietly, and to check all fretfulneſs.

In the ſecond chapter, it is ſaid that ſheep are 'helpleſs and harmleſs,' &c.; that they 'have an antipathy to a dog, which is a ſpecies of wolf;' that 'rams poſſeſs more courage than ewes or wethers;' that they are afraid of thunder and lightning; that the head is their weapon of offence and defence,—with a good deal more of ſuch important information. Then come ſome hits at the Romney Marſh management, and quotations from Daubenton, containing the ſigns of health in ſheep. After ſome looſe, and apparently contradictory obſervations (owing to inaccuracy of expreſſion) on the diſpoſition of ſheep to fatten, it is obſerved, that ſheep of a good diſpoſition muſt poſſeſs certain properties, among which are—'that the proper proportion of parts, or make of ſheep, indicates a good or bad diſpoſition.' From this ſentence, one would ſuppoſe that the author meant, that ſhape was of no conſequence; becauſe he ſays, that the *proper* proportion indicates both *good* and *bad* diſpoſition. Again—'The handling of the ſheep, free and mellow in its fleſh, is a good criterion of a ſuperior diſpoſition.' The author certainly meant to ſay, that if, on handling a ſheep, its fleſh is felt free and mellow, we may conclude that it has a good diſpoſition;' not that the mere handling is a criterion. The explanations afterwards given are extremely obſcure; and ſhow the author's fitneſs to manage his ſubject, by identifying the *conſtitution* of a ſheep with *circulation.* (p. 41.) In mentioning what he calls the quietude of ſheep, Mr Price ſpeaks of ſome being more *cade* than others. This ſeems to be a provincial term, and quite unintelligible to us. We know that even the better ſort of people in Kent ſpeak bad Engliſh, as well as the ſame claſſes in Scotland; but the former are leſs excuſable in writing it. Probably the famous Jack Cade had ſome ſheep of a peculiar diſpoſition. We believe he was a Kentiſh man.

After

After having read Culley on Live Stock, the section on the good qualities of sheep did not interest us much. We meet with frequent references to the *constitution of the soil*, where the author evidently means the quality of pasture. In short, the whole of the book seems intended, not to recommend the Romney Marsh management, but to condemn it. If the author believed that the management in the whole kingdom was as bad, he might have gained credit by his observations. But we have not yet done. Going on, we are surprised to find that a grazier of eminence was in the habit of riding on his rams. It is said, he had 'rode the Leicester rams.' We presume that the author meant something about the rams riding, and not the grazier. Nothing remarkable occurs, till we reach p. 104, where there is the following paragraph. 'In my opinion, the best time for lambing in the Marsh is about the 12th April,—an opinion in which the most experienced graziers concur, from having observed fewest deaths happen when this period is chosen. The ewes are, a week or two before, 'arranged for the riding,' &c. Although it is clearly so expressed, it is impossible that the author can mean to say, that the ewes are put to the rams about the end of March, and drop their lambs on the 12th April. In next page, we find again graziers *riding* their ram lambs.

Chapter third begins with these words—'The principles of lambing.' Next page, we find the 'practice of lambing,' and that the author is not a novice in it. One would imagine from this, that lambing was an art or science, and that the author was a ewe! But it seems, that by lambing is meant, a branch of the obstetrical art, which being much practised in the Marsh, a great loss of lambs is experienced. From the wretched management described in this costly volume, we are not surprised that a section on preternatural labour should be thought necessary—especially as the author is a practitioner. We can hardly get on; constantly meeting with people lambing, which excites our risibility. We find ewes *lambing*, and *a young man lambing* for his father, in the same page, (163.) It is a pity that Sir John Sinclair, in his approbation, did not correct the numerous obscure and ridiculous expressions made use of by Mr Price.

In chapter fourth, we find 'Practical rules for breeding,' &c. The soil is here again substituted for pasture; and we read of the *size* of an animal being *underneath* the soil. Let us not suppose that the animal was buried. Some of the remarks under the section 'Management' are good; but there is so much obscurity, that it is with some difficulty the author's meaning can be discovered. In the description of the practice of a bad manager, we find the reason why there is so much bad management in Romney

Marsh. The graziers are stated to be of opinion, *that if they have brains sufficient to keep them out of the marsh ditches, they have plenty to make a grazier.* There is a question stated as the title of a section, p. 182, 'Are (is) the Leicester variety of sheep to be considered as an improvement of the Romney Marsh breed?' From this we imagined, that the Leicester breed was alleged to be the Romney Marsh breed improved; but, on reading further, we found that the question was, Is the Leicester variety of sheep likely to improve the Marsh breed by crossing? The section on the Anatomy of Sheep is very imperfect. That on the most proper size of sheep is worthy, as the whole book is, of the attention of the Romney Marsh grazier. We have a section entitled, 'On Sheep Societies,' which is filled with remarks on breeding. In cheaper books, tyros in sheep-farming will find as useful ones on the same subject. Indeed, in p. 244, the author acknowledges his ignorance of sheep-grazing, and does not wish his statements to be depended on. This information will greatly shorten our labour, and enable us to keep within our ordinary limits. We hasten to the section, 'Practical Remarks on Management;' but find nothing in it, except some remarks on what happened in the year 1805, contained in two pages. A few, but good advices, are given to young graziers in pages 305 & 306. In chapter tenth, there is a proposal for the establishment of a *grazing college*, which, if carried into execution, might, under suitable management, be attended with several advantages.

The two last chapters are on the Diseases of Sheep. The first described is called the Blood, which is the same with the braxy, or sickness, as it is sometimes named. The whole of what Mr Hogg urges on that important subject is quoted by Mr Price, though certainly it has no connexion with Marshland management. Then comes a quotation from Daubenton on bleeding; next, there is a long account of sturdy, or water in the head; and Mr Hogg is again liberally made use of: he also furnishes the dissertations on Rot and on Scab. Indeed, most of the last hundred pages is borrowed from other people.

We have now gone through this expensive volume, and sincerely regret the loss of our two guineas. It may perhaps be beneficial in Romney Marsh, but probably no where else. All the useful knowledge in it has already been conveyed by other authors, who have not buried their information in a mass of rubbish. The book is clumsily and heavily written, and every thing is expressed in a confused manner. Notwithstanding it is finely printed on wove paper, we may assure our readers, who are beginning the business of sheep-farming, that they need not regret that the price puts the book out of their reach.

Before

Before closing the article, we cannot refrain from offering a few remarks on the sheep system of Romney Marsh, with some hints for its further improvement. These, if candidly examined, may probably be of some advantage to the graziers of that valuable district.

In the *first* place, the radical defect of the Romney Marsh sheep husbandry is a want of winter keep for live stock; whence arises a necessity of wintering lambs, and young stock, in the upland districts, where they are often badly supplied with food, and imperfectly managed. The like circumstance occasions the grazier to overstock his pastures in winter, when they ought rather to be hained or preserved; for the eating of grass land in winter, even in a moderate manner, necessarily retards its growth in the spring season. Hence the Marsh farmers are constantly overstocked in the worst, and understocked in the best months of the year; which is quite opposite to the practice of good graziers in other districts. In fact, the present Marsh system is exactly the same with what was practised some centuries ago, and greatly inferior to that of other grazing districts. The stock may probably have been improved, though the method of management continues as formerly. That the stock has been amended, we entertain not the slightest doubt; though, without a larger supply of winter food, a complete, or even a substantial amendment, is not to be attained.

In the *second* place, we remark, that if aration was more generally introduced into the district, and exercised upon such soils as are not naturally unfit for tillage, incalculable advantages would follow. We by no means recommend any thing like a general introduction of the plough; being fully sensible, that the soil of the district is adverse to extensive or continued tillage: but were it only carried so far as to furnish an opportunity for raising green food, we mean turnips, ruta baga, &c. many more sheep might be kept, and a great deal of more profit gained from a given number, than is practicable at the present time, when winter keep is so scarce an article. Rich crops of corn might be raised, in the first instance, at small expense, and weighty crops of turnips would follow, even though the ground was not manured, to the great benefit of the occupiers, and the increased welfare of their numerous flocks. Even a partial supply of turnips would be of immense advantage. Were such a quantity of that root provided as might serve the flocks in the months of February, March, and April, when the pastures are so dull, after being blasted with the winter storms, as only to afford a small supply of food, and that yielding little nourishment, the benefit would be considerable; for wether sheep might then be regularly provided for the butcher, the ewes preserved in good condition for bringing forth healthy and fat lambs,

theſe, never being ſtinted of food, would ſoon be ready for the butcher, from whom a better price might be obtained in the end of May, than what is now got at the concluſion of the graſs ſeaſon. But before aration can be exerciſed in a judicious way, or turnips raiſed to a ſufficient extent, the ſurface and ſubſoil muſt be properly drained. The open drains and ditches, which interſect the country, muſt be kept quite clean, ſo as the water from covered drains and headland furrows may be carried off without the ſlighteſt interruption. In a word, it is quite practicable to introduce the plough, and raiſe winter crops, in a conſiderable part of Romney Marſh. Perhaps the management recommended would, in the firſt inſtance, be attended with ſome trouble and expenſe; but thoſe who neglect improvements for no better reaſon than that they are attended with trouble and expenſe, can, neither in Romney Marſh, nor any where elſe, be characterized as good farmers.

In the *third* place; we are not quite ſure that Romney Marſh can be ſo profitably employed in rearing as in fattening ſheep. It is a maxim with us, that a breeding farm ought never to be the fattening one, except in ſo far as reſpects the crop of lambs, which can hardly be viewed as an exception. Breeding may be carried on upon every ſoil and in every ſituation; whereas feeding in perfection can only be executed upon good ſoils; thoſe of a different deſcription, ſeldom making the farmer a ſuitable return for the graſs conſumed by the animals attempted to be fed upon them. Hence, in all rich grazing diſtricts, it is more profitable to purchaſe ſtock annually, or when wanted, than to breed the animals; becauſe both cattle and ſheep can be reared at leſs expenſe upon inferior ſoils. Under ſuch circumſtances, it is alſo cuſtomary to ſell live ſtock to the butcher the moment it is fattened, rarely holding any on, even lambs, longer than the time required to fatten them. Thoſe who manage in this manner, purchaſe ewes annually, ſay about Michaelmas; keep them well throughout winter and ſpring, eſpecially a fortnight before lambing time; ſell the lambs to the butcher, when about two months old or ſo, and the ewes in the courſe of ſummer, after being fattened. Wether ſheep are purchaſed and managed ſomething in a ſimilar manner; only the time of purchaſing is regulated by the ſtate of the markets and condition of the paſtures. According to theſe methods, the occupier of rich graſs will be better paid than if he kept a regular breeding flock; whilſt leſs capital ſtock will ſuffice for carrying on his buſineſs, and leſs riſk of loſſes in the flock will be hazarded. Beſides, a ſyſtem ſuch as the one recommended, is more conſonant with the general intereſt of the country than its oppoſite; therefore, on that account, merits our countenance and ſupport. The uplands, and inferior ſoils, according

cording to the meaſures we have ſuggeſted, are left to breed animals, *i. e.* cattle and ſheep; whilſt the rich low country diſtricts are reſerved for feeding and preparing them for the ſhambles.

E. & N.

A Treatise on the Diseases and Management of Sheep, with Introductory Remarks on their Anatomical Structure; and an Appendix, containing Documents exhibiting the Value of the Merino Breed of Sheep, and their Progress in Scotland. By Sir George Stewart Mackenzie, Bart. pp. 180. Edinburgh, Conſtable and Co. 1809.

In the introduction to the *Scots Farmer*, a periodical work, publiſhed at Edinburgh in 1773 and 1774, the editor, ſpeaking of the aid which might be expected from the tenantry of Scotland in carrying on ſuch a work, ſays, 'they are undoubtedly poſſeſſed of a number of facts not generally known; *and the management of sheep is all their own.*' Though this very probably was the caſe at the period when the Scots Farmer was publiſhed, yet it is unqueſtionably true, that men of ſcience and obſervation have for ſeveral years paſt turned their attention to ſheep huſbandry, conſidering it as a moſt important branch of rural economics. The celebrated Mr Culley led the way. Sir John Sinclair and the Britiſh Wool Society followed his ſteps. The Highland Society alſo accumulated a large ſtore of valuable information concerning the management and diſeaſes of ſheep; and we are now favoured by one of their moſt active members with a practical treatiſe on the like ſubjects. From theſe circumſtances it may clearly be inferred, that an intimate acquaintance with ſheep huſbandry is now ſpread amongſt rural practitioners in every quarter; and that the knowledge, neceſſary for managing and treating that branch of ſtock, is not confined to ſhepherds and farmers, as it was in former times. Hence uſeful improvement, not only in the ſelection of proper breeds, but alſo in the mode of treating them when diſeaſed, may ſoon follow, to the great benefit of the public, and the advantage of thoſe concerned in the rearing and feeding of ſheep.

Sir George Stewart Mackenzie, well known as a gentleman of active mind, being, from the nature of his landed property, much intereſted in ſheep huſbandry, turned his attention, at an early period, to that important ſubject; and, in the treatiſe which we are now to examine, furniſhes ſheep farmers with much information concerning the diſeaſes to which ſheep are liable, and the moſt appropriate remedies when they are diſeaſed. The objects of this work, however, will be beſt learned from his previous addreſs to the Northern

Aſſociation; a part of which ſhall be given in the firſt place, and other paſſages ſhall afterwards be extracted, ſo as our readers may be enabled, in ſome degree, to eſtimate the merits of this uſeful and practical publication.

'I had some thoughts of executing this work several years ago, but relinquished them on my not finding any of my medical friends sufficiently disengaged to assist me in the dissections which I thought necessary. In the mean time, on the suggestion of my learned and worthy friend Dr Coventry, I took advantage of my being Convener of the Prize Committee of the Highland Society, and proposed the premium which called forth many valuable essays on the diseases of sheep, which, after having been compressed into one memoir by Dr Duncan, junior, have been published in the Transactions of the Society. Having perused that memoir, I was fully convinced, that a more intimate knowledge of the anatomy of sheep than seemed to be possessed by the authors of the essays, who were not medical practitioners, was necessary, before any regular system could be formed for preventing and curing the diseases to which these useful animals are liable. I, therefore, lately made another attempt to obtain the assistance of a person well qualified for the task; and it gives me great pleasure in informing you, that Mr James Wardrop, whose abilities are too well known to require any eulogium from me, has kindly afforded me the assistance I required. To him you are indebted for the first part of this volume. The rest did not require much labour; and, as far as my scanty knowledge of medicine and surgery has enabled me, I have endeavoured to execute the task I assigned to myself, with brevity and distinctness. The anatomical observations are, purposely, very general; but, it is hoped, sufficient to give a correct idea of the different parts most essential to life. Had the observations been more minute, they might have appeared tedious, and probably have deterred those for whom this volume is chiefly intended, from entering at all on a study which is of more importance to sheep farmers than is generally allowed.

'Owing to the very extensive ranges which sheep are permitted to have on large farms, it is difficult to discover a sickly animal before its disorder has made so much progress as to render every attempt to remove it quite unavailing. On that account, it becomes of very great importance to feed and manage sheep in such a manner as to expose them in the least possible degree to any thing which might injure their health. But before we can prevent diseases, we must understand their nature. We have not yet arrived at a sufficient degree of knowledge for enabling us to distinguish the diseases of sheep with accuracy, or to trace them to their origin. Thousands of these animals have been opened after death; but although we have been told, that the liver, the stomach, or other viscera, have been affected, we find the appearances of the parts indiscriminately and arbitrarily referred to the disease under which the animal was presupposed to have

have been suffering. Unless there has been a careful observation of the symptoms by which an animal has betrayed an inward complaint, an examination of the appearances which present themselves on dissection is almost useless. Before we can accurately discover the nature of any disease, we must observe the early, intermediate, and last symptoms, and then search for the cause by dissection. It will be necessary too to kill some animals labouring under the first symptoms, in order that the situation of their cause may be discovered. When we are told, that the general appearance of the body of a sheep which died of *braxy*, was that of an inflamed, or mortified mass, we are not conducted to the original seat of the disease. While one person insists that an affection of the liver is the cause of the rot, and another maintains that that malady originates in the lungs, we are not satisfied. Sometimes both the liver and the lungs are found to have been affected, and then we are still farther from the object of our search.

'By knowing the functions of the different organs, and their connexion with various parts of the body, we may sometimes discover that some apparently very trifling circumstance may have been the cause of the most formidable diseases. Whilst those who have the best opportunities of observing sheep, are ignorant of the uses and actions of the different parts of their bodies, we cannot expect to make much progress in acquiring knowledge of the causes of the various diseases to which these animals are subject. In the management of horses, we see the beneficial effects which have followed a display of their anatomical structure; and almost every groom can tell the causes of any particular symptom of disease. I have humbly endeavoured to pave the way for shepherds to acquire a competent knowledge of the structure and uses of the most important parts of the animal in whose health they are so much interested; and I trust that others, who have more opportunities, and are more skilful, will follow up the subject, and collect such facts and observations as will enable us to manage our flocks without having recourse to the assistance of vulgar prejudice.

'My friend Dr Duncan is right when he prefers good management to doctoring; but, to arrive at that, we must be able to understand the causes of what we wish to avoid.' p. iv.—vii.

The First Part of the work gives a correct view of the Anatomy of Sheep, without which, every attempt to prescribe remedies for diseases to which the animals are liable, would have been but groping in the dark, and prescribing at random. The Organs of Digestion are first explained; and two plates are given of the Stomach and Intestines, which must prove beneficial to those who have not dissected sheep, or patiently investigated the different parts of the animal. The contents of the Chest, or Thorax, are next described. An account of the Lungs follows, which is succeeded by a minute description of the Brain and Nerves, concerning

cerning which, a plate is also presented. The last section is on the Teeth of Sheep; and what is stated may be of some use to our readers, at least to those who are only entering upon sheep farming.

'The age of a sheep may be known by examining the teeth on the fore part of the under jaw. They are eight in number, and appear during the first year, and are all small in size, and pointed. In the second year, the two middle ones fall out, and their place is supplied by two new teeth, which are easily distinguised by their being of a larger size. In the third year, two other pointed teeth, one from each side, are replaced by two large ones, in such a manner that there are four large teeth in the middle, and two pointed ones on each side. In the fourth year, the large teeth are six in number, and only two pointed ones remain, one at each end of the range.

'In the fifth year, the remaining pointed teeth fall out, and are replaced, so that the whole set are large. In the sixth year, the whole front teeth begin to be worn, by being constantly rubbed one against another. In the seventh and eighth years, and sometimes sooner, some of the front teeth fall out, or are broken.' p. 21, 22.

The Second Part is on Wounds, &c.; which, being of a general nature, shall be passed over. With regard to Bleeding, we have some useful information. Probably this operation is too much neglected when sheep are diseased; and under this impression, the author's directions shall be extracted.

'This operation is most conveniently performed on a large vein, whose branches are spread over the face of the sheep. The vein may be felt distinctly coming from the neck, and passing over the edge of the lower jaw to the cheek, about two inches from the corner or angle of the jaw, or opposite to the third of the grinding teeth. When the operation is to be performed, the sheep is to be held between the limbs of the operator, and the croup placed against a wall, to prevent the animal from recoiling: the left hand is to be placed under the head, and the under jaw grasped in such a manner, that the fingers come upon the right side of the jaw, so as to press upon the vein, a little below where it is intended to be opened. By thus pressing on the vein, the flow of blood is prevented beyond the place where the pressure is applied; and the blood, consequently, can find no other course but through the artificial opening about to be made. The operator, with the lancet or knife, opens the vein by making an incison *obliquely* across it at the place where the trunk is largest, and where it is most distinctly felt through the skin. The oblique direction of the cut, is found to answer better than either one made directly along the course of the vein, or one across it. While introducing the instrument, it is of great consequence to keep the vein from rolling under the skin, and escaping from the point; this is best accomplished by making the incision close to the point of the

the finger which presses upon the vein. In diseases of the head requiring bleeding, and in particular inflammations of the eyes, it is most advisable to open the vein of the cheek; but in diseases of other parts, blood may also be procured from a large vein that runs along the fore leg. This vein passes from the foot along the back part of the leg to the ham, and then goes obliquely over to the fore part of the limb. It is nearest the surface, and sufficiently large, a little above the knee, and may, at this place, be easily opened. The operation may be best performed by securing the other three feet of the animal; and the operator, by grasping the limb above the place where the vein is to be opened, causes it to swell, and after it is distinctly felt, makes an incision in the manner recommended when the vein of the cheek is to be opened.' p. 34—36.

The Sturdy, or Water in the Head, is well known to be generally fatal. Hence we were anxious to see how our author would treat of it. We have never seen Mr Hogg's remedy tried, therefore cannot offer an opinion on it; though certainly his authority is of considerable weight, therefore not to be disregarded.

'The cause of one species of sturdy has been already mentioned. The collection of water in the ventricle of the brain is deemed an incurable disease, and probably is so. The other, and most common, species of the disease, arises from animalculæ, called hydatids. In this case the water is contained in cysts, or bags, unconnected with the brain, on which, however, if not prevented, it acts fatally by pressure. It would appear too, that a long continuation of the pressure occasions part of the brain to be completely disorganized, and converted into a substance, the examination of which may afford some instructive hints to anatomists, but which is foreign to our present purpose.

'Very soon after water has begun to collect, either in the ventricles or cysts, the animal subjected to the disease shows evident and decisive symptoms. It frequently starts, looks giddy and confused, and as if at a loss what to do. It retires from the rest of the flock, and sometimes exhibits a very affecting spectacle of misery.

'Various methods of relieving the pressure on the brain have been proposed; and when put in practice by skilful and patient hands, most of them have succeeded. It would be superfluous to enumerate and describe them all, as a method has been found of perforating the cyst, which has succeeded perfectly in numberless instances; and which, from the ease with which it may be performed, very strongly recommends itself. Yet the operation is one which, from reasoning on the peculiar delicacy of the brain, never would have been advised. We are indebted for it, it would appear, to Mr James Hogg, who tried the experiment, to rid himself of trouble, while a herd boy. He laid hold of every sturdied sheep which came in his way, and (being employed in knitting stockings) he thrust one of his wires up the animal's nose, and forced it through the skull into the

the brain. In those cases in which wiring proves fatal, it is probable that the instrument does not reach the cyst. There may, indeed, be some portions of the brain more delicate than others; and, on the whole, however general the success of this operation may be, it must be considered as hazardous. Desperate diseases, however, require desperate remedies.

'The more delicate and nice operations of trepan, and extraction of the cyst, are fit to be in the hands of skilful surgeons. But with ordinary servants, the bungling of either, which would be fatal, would occur so frequently, that only the simple operation of wiring shall be described by the explanation of plate 4th, (which see.)

'An anatomist may make many interesting discoveries, while attending to the disease, and the effects of the operation. That in almost every case part of the brain is displaced and destroyed, has been ascertained. If it shall be found, that, in animals which recover, the brain is reproduced, so as to fill up the space which had been occupied by the cyst, the fact will be curious and important.' p. 41—43.

The Third Part treats of Diseases, namely, 1. Red Water; for which bleeding is very properly recommended. 2. The Erysipelas, or Wild Fire. 3. Scab, or Itch, which shall afterwards be noticed. 4. The Leg Evil, or Black Leg. 5. Maggots. 6. Sore Nipple. 7. Foot Rot; on which disease, a memoir, by Mr Pictet, is given; though too long for insertion at this time. But as it appears to contain interesting information, we shall present it entire in our next Number. 8. Rot. Here Sir George Mackenzie combats the opinion of Mr Hogg, who maintains, and we think with some truth, that the rot is caused by a sudden fall in condition. 9. Sickness, or Braxy. 10. Diarrhœa. 11. Dysentery. 12. Pinding, a disease to which lambs are subject. 13. Staggers. 14. Jaundice.

Having barely noticed the different diseases to which sheep are liable, we return to the one called Scab, or Itch; and shall present Sir George's opinion on that subject.

'This infectious, troublesome, and destructive disease is well known. It seldom appears among sheep which have been smeared; and when it does, it proceeds, most probably, from the touch of a diseased animal, of a stone, or a tree, or paling, on which scabbed sheep have rubbed themselves. A sheep is never, even slightly, affected, but it proceeds to scratch itself, and to rub its sides and buttocks against every thing it meets. As soon as the disease is discovered, the whole flock among which the scabbed animal has been pasturing, should be carefully examined; and every one which has an appearance of being fretted on the skin, must be taken away to be cured. Several ointments have been proposed for the cure of this disease; and that of Sir Joseph Banks seems to have been most approved

proved of. His prescription, however, can only be made by an apothecary, a personage not always at hand, and who may not always have sheep ointment ready when wanted. Every apothecary has abundance of mercurial ointment at all times; and if a shepherd purchases a quantity of it to keep by him, with a little oil of turpentine, he may always have it in his power to make up ointment when he requires it, and of such a degree of strength as he may judge proper.

'The following directions may be found useful.

Take of strong mercurial ointment, 4 lib.
oil of turpentine, ... ¼ pint, Eng.
hog's lard, tallow, or butter 4 lib.

Melt the hog's lard, or butter; allow them to settle, and pour off the clear liquid; then add the mercurial ointment, stirring the whole well, till it be melted and incorporated, and then add the oil of turpentine. Keep stirring the mixture for a minute or two, that the mercury may be completely mixed, and then pour the whole into some shallow vessels, that the ointment may cool quickly. If the mercury should appear to have sunk when the ointment is cold, it may be rubbed a little with a smooth flat stick, on a plate. But there will seldom be any occasion for this, if the process be well managed. A very effectual, and a much cheaper ointment, may be made as follows.

Take of corrosive sublimate . . . 8 oz.
train oil . . . . . 6 gallons, Eng.
rosin, (black or yellow). 2 lib.
tallow . . . . . 2 lib.

Let the corrosive sublimate be reduced to a fine powder, and mixed with a portion of the oil. The rosin, tallow, and remainder of the oil, are to be melted together over the fire, and the sublimate afterwards added.

'If this mixture should be thought too thin, the proportion of oil may be diminished, and that of the tallow increased. Were one or two pounds of powdered white hellebore to be added, it would improve both the consistence and efficacy of the ointment. One pound of sublimate, at 10s., will, in this way, go as far as 50 pounds of mercurial ointment, at 3s.

'If the wool be not taken off, either of these ointments, or that of Sir Joseph Banks, is to be laid on, in the same manner as smearing stuff, beginning with a line along the back; one is to be laid on each side, and one down each leg. The neck, inside of the thighs, and belly, should have a share. In every case, however, the wool should be shorn, except during very cold weather, and the animal washed and brushed with soap and water, before the application of the ointment, which may now be applied all over the body. The mercury will have more effect, and less of the ointment will serve, when all filth and loose scabs have been removed by the washing. What is recommended in another part of this work, viz. anointing the

the sheep after being shorn, will be found a very effectual means of warding off the scab, and every disease of the skin.' p. 46—49.

The Fourth Part is *on the Management of Sheep*; in which Sir George gives us much interesting information; though our limits will not allow more being done than merely mentioning the heads of it. He recommends good shelter, which undoubtedly is highly necessary; speaks of the danger from snow-drifts, in winter storms, and mentions how it may be avoided; shows that rain is not hurtful to sheep in summer,—and not much even in winter, providing they are in a good habit of body, and well fed; points out the evil from flies in warm weather, and prescribes a remedy; gives salutary advices about feeding sheep, and recommends, that the neighbourhood of stinking pools of water should be avoided; directs how smearing, or salving, should be executed; and judiciously advises a larger mixture of butter with tar than commonly used. As to washing wool, Sir George thinks it may be delayed till the fleece is clipped, and mentions a plan for that purpose. Shearing, or clipping, is then noticed; which operation, he thinks, is generally performed by common shepherds in a slovenly manner.

We are afraid that Sir George's plan for killing foxes, will not be highly relished by those patriotic gentlemen who keep horses and hounds, at great expense, for no better reason than to procure the destruction of these noxious animals. The plan, however, seems well entitled to consideration.

'Notwithstanding the very great losses which are annually experienced from the ravages of foxes, eagles, and other birds, little ingenuity has been exerted to devise means of destroying them. It would be better for sheep-farmers to have fox-catchers than fox-hunters; and with very little trouble, every one of their shepherds may be made much more useful in destroying those animals than the ordinary fox-hunters, and that without interfering with their attendance on the flocks;—nothing more is required than to put the means into their power, and to hold out some reward proportioned to their success.

'Various pit-falls might be contrived for taking foxes; but poison is the most effectual instrument of destruction, when properly employed, both for foxes and birds of prey. Of the different poisons used for killing vermin, arsenic and corrosive sublimate are the most powerful. Whoever chooses to adopt the following method of using them, will not probably have any cause for seeking a better one.

'Take the carcase of a sheep, and having removed the skin, fasten it to the ground in some open place, with the back uppermost. Make cross incisions into the fleshy parts, so that the squares made by the cuts do not exceed an inch and a half. Separate each piece nearly from the bone, but not altogether. Then make one or two punctures

punctures with a pen-knife, an inch and a half deep into each piece, and fill them nearly full of a mixture of equal parts of corrosive sublimate and arsenic, previously made into a paste with honey. Put all the squares into their natural position, and leave the place.

'When a fox, or an eagle, or a parcel of ravens, or crows, attack the carcase, they will not find much difficulty in tearing off the flesh; and in the hurry of competition for the largest share, they will gobble up the poisoned pieces entire, and soon die. When a carcase is poisoned without cutting it as here directed, the poison is apt to be lost while the animals are employed in tearing off the flesh. By fastening the carcase to the ground, the pieces of flesh will come easily off.

'Should the shepherd be anxious to catch the animals, let him fasten a good strong fish-hook of a moderate size in each piece of flesh, which must, in this case, be entirely separated from the bone, and need not be poisoned. By fastening the hooks to the ribs of the carcase by means of strong wire, both foxes and eagles may be caught. The common pike hooks will answer very well, but a much smaller size will do for birds. Shepherds must take care to keep their dogs out of the way; but if any strange cur should be prowling about in search of a lamb, or a leg of mutton, and stumble upon the baits, he will meet the fate he deserves. It will be proper to select, for the baits, places where sheep do not feed, such as bare moss, or gravel, or some banks at the sides of streams.' p. 116—118.

An account of Sheep Medicines is next communicated, which is followed by an explanation of the several plates, given in a very satisfactory manner.

The Appendix contains various papers concerning the Merino breed of sheep, which we have not room to notice. Upon the whole, Sir George Stewart Mackenzie is well entitled to the thanks of the public for devoting his leisure time to the investigation of subjects confessedly of the highest importance to the agriculture and commerce of the British empire. Of all our domestic animals, the sheep, in every point of view, is entitled to the highest preference; and a very small improvement of fleece, or carcase, would add millions to the national property, besides increasing the stock of human food, and benefiting the staple manufacture of Britain in an incalculable degree. We repeat, that Sir George Mackenzie deserves well of the public, for the trouble he has taken at this time, and hope that he will not lose sight of the important matters discussed in this volume; on the contrary, that his endeavours will constantly be exerted to benefit the husbandry of Britain, and to promote improvement in one of its most valuable branches. N.

General

General View of the Agriculture of the County of Berwick, with Observations on the Means of its Improvement, drawn up for the Consideration of the Board of Agriculture, and brought down to the end of 1808; *with several Plates.* By Robert Kerr, F. R. S. & A. S. E. Farmer at Ayton, in Berwickſhire. London, Philips. Edinburgh, Conſtable & Co., and T. Bryce & Co. Archer, Dublin. pp. 504. and a large Appendix. 1809.

THOUGH the county of Berwick, or, more properly ſpeaking, that part of it called *the Merſe*, has, for many years, been conſidered as holding out a pattern of good huſbandry, yet, it is well known, that the diſtrict of Eaſt Lothian was brought into a cultivated ſtate at an earlier period; and that every branch of huſbandry, carried on by the diſciples of the old ſchool, was much more completely executed in the latter, than in the former diſtrict. Reaſons for the ſlow progreſs of rural art in Berwickſhire may be eaſily aſſigned. Property of every deſcription was held under an inſecure tenure, till both ſides of the Tweed came under the government of one Sovereign. Even after the acceſſion of James VI. to the throne of England, a long interval prevailed before former habits were removed, and induſtry introduced amongſt the Borderers. At the union of the two nations, agriculture was only partially and feebly executed in Berwickſhire; and it was not ſooner than 1750, that rural art began to rear its head in the diſtrict under conſideration.

Notwithſtanding that agriculture was brought more early into a comparatively perfect ſtate in Eaſt Lothian than in Berwickſhire, yet, it is equally certain, that moſt of the modern improvements were ſucceſsfully attempted in the laſt mentioned county, before they got any thing like a firm footing in the other. Lime and marl were the baſis of Berwickſhire huſbandry, when improvements were ſet about; and owing, in ſome meaſure, to the freſhneſs of the ſoil, theſe calcareous articles were uſed with ſingular advantage. Again, the management of live ſtock being well known in Berwickſhire, its farmers were influenced to cultivate turnips and graſſes to a great extent, and, in ſhort, to follow the alternate ſyſtem of huſbandry more effectually than their neighbours, whoſe attention was in ſome meaſure devoted to the culture of corn. Owing to theſe circumſtances, the huſbandry of Berwickſhire ſtands at this time high in the agricultural ſcale; and very fortunately the deſcription of it has been entruſted to a gentleman eminently qualified for executing the taſk, as may appear from the following account of his labours.

Berwickſhire is ſituated in the ſouth-eaſt corner of Scotland, lying along the German Ocean, and the north-eaſt border of England.

land. According to the authority of Mr Blackadder, an eminent landsurveyor, the total extent of the county is 290,000 English statute acres, whereof about 114,000, in the lower districts, are improved, or improveable, and about 175,000 of hill land in Lauderdale and Lammermuir, part of which is also improved. The climate, comparatively speaking, is dry; and, though the preceding reporters represent it as unfriendly to agriculture, we are inclined to think with Mr Kerr, 'that as the whole lower district, generally speaking, ripens its grain crops as perfectly, and very nearly as early as any part of Britain north of the Humber, the climate cannot be a bad one.' Every variety of soil is to be found within the county; and, along the banks of Tweed, Whittadder and Blackadder, there are extensive tracts of fine deep loam, but none of a chalky or calcareous nature.

In the section upon soils, Mr Kerr gives some observations worthy of the attention of our readers.

'A peculiar kind of soil occurs in many places, which is apt to deceive even experienced agriculturists, having a fine free appearance, and often of considerable depth, but wanting consistency or tenacity; in other words, not having a sufficient admixture of clay in its composition to enable it to retain manure or moisture. This soil is provincially termed *deaf*, and is almost entirely composed of finely pulverized sand of various shades of brown,—sometimes, especially when wet, almost black, like fine garden mould. This is most extremely infertile, and very speedily exhausts or consumes muck, or farm-yard manure. Under superior management, it may be brought to carry tolerable crops of turnips and grass; but the grain crops upon it are invariably false in the ear, and its grass is extremely liable to become quite dry, as if burnt up, in droughts of any endurance.

'On the suggestion of an eminent agriculturist, it may be proper to mention, that the texture of the last described soil might be completely altered, and most materially ameliorated, by the application of a sufficient quantity of clay marl, which would ensure its future fertility. Yet, in general, little of that valuable substance is procurable in the immediate neighbourhood of such soils; and to carry the necessary quantity of clay marl from any considerable distance, would be attended by an expense which could not be warranted by almost any degree of amelioration.

'In every quarter of the county, moors occur of greater or less extent, from several thousand acres to patches of two or three acres, and even considerably less than an acre. In the low country, these are usually on the flat tops of the isolated or detached hills, but are often interspersed among the vale lands. They are composed of various kinds of soil; for the term *moor* is extremely vague in its use and signification. Some are of a thin poor clay, upon a bad till bottom; others of a thin surface of peat moss, wasted to a kind of black light earth, often mixed with sand, upon a subsoil of impervi-

ous till, or a compacted clayey sand, apparently ferruginous, like a bad species of sandstone not perfectly lapidified. This peculiar species of subsoil is provincially called *Moor-band*, and, like the coarse clay or till bottom, is absolutely impervious to water; hence, the thin superincumbent peat soil is a soft mortar in wet weather, and becomes sterily dry in droughts of the most moderate continuance.

'Another kind of soil called dry moor, found in many places, is composed of a thin sandy, or gravel soil, upon a free bottom. This is susceptible of cultivation and improvement, and is lessening every where by that means, where not too elevated on the Lammermoor hills, to defray the expense. When improved, this becomes a turnip soil.

'The hills of Lauderdale and Lammermoor are usually denominated *the moors*, and, where unimproved, are partly covered by sound short natural grass, forming excellent hill pasture for sheep, that are sufficiently active and hardy for such exposed situations. Where of sufficient depth of soil, and not in too high elevations, these may be improved into tolerable turnip soil, and very much ameliorated as pasture land; and extensive tracts of this kind of moor have been so improved, or actually are under a course of improvement.

'Other moor or hill lands are productive of a rank coarse grass, intermingled with various species of rushes, generally called bents and sprats, and with other marsh plants, which make tolerably good summer pasture for small black cattle. By judicious draining, and other means of improvement, the herbage of this kind of moor may be much amended, and even converted to healthy sheep pasture, or, by means of irrigation, might be made productive of hay, where that improving process is practicable.

'Large extents upon the hills or moors are overgrown with heath, provincially named *heather*, *quasi* the heath plant; and some by furze or gorse, provincially called *whins*. The value or fertility of such lands may be generally assumed as in direct proportion to the vigour with which these plants grow. Hence, wherever they vegetate luxuriantly, improvement may very reasonably be expected to answer; and, on the contrary, where these are stinted and scanty in their growth, the soil may be considered as too barren to repay the expenses of cultivation. Broom is a sure indication of a dry sandy soil, and sound free bottom; and where this plant grows tall, thick, and strong, if other circumstances are favourable, the soil may almost certainly be improved into tolerably good turnip and grass land. Ferns, like broom, affect deep dry soil, upon a sound bottom, and may therefore be considered an indication, that the place of their vigorous growth is worthy of attention.

'After judicious improvement upon tolerably good soil, heather never returns, unless the vegetative powers of the soil have been exhausted by over-cropping. But, after the most perfectly devised and well executed system of improvement, when land which formerly carried whins or broom is laid down to grass, the seeds of these shrubs,

shrubs, remaining in the soil, are sure to vegetate, and to become troublesome. If left to themselves, they will soon again usurp the soil, even more abundantly than before it was cultivated and improved. But constant attention to pull up the seedling plants by hand, after rainy weather, when the soil is thoroughly drenched and quite tender, will completely eradicate these plants in a few years, and at a moderate expense,—so long only, however, as the land remains in grass. When broken up again for tillage, the seeds of these shrubs, which still remain in the soil, and are again brought within the vegetative influence of the sun and air, and weather, will now grow; and it will require the repetition of similar attentions, to prevent these new seedlings from usurping possession of the soil, in exclusion of the cultivated herbage. A long continued series of good tillage husbandry is necessary for effectually eradicating these plants from land in which they have largely shed their almost imperishable seeds; imperishable in any known length of time, while buried in the soil, below the vivifying influences of the sun and air, but uniformly vegetating whenever these influences reach them, in consequence of turning them up by the plough.' p. 31—35.

After describing the state of property, Mr Kerr offers the following judicious observations.

'Many of the landed gentlemen reside upon their estates, either principally, or at least occasionally, and cultivate a portion of their own lands for conveniently supplying their families and stables. Some even pursue the practice of agriculture extensively, with great spirit and judgment. There cannot certainly be a more rational, or more continually varying and amusing occupation of time, for the retirement of a country gentleman, than the detailed superintendance of agricultural pursuits, united with attention to the improvement and embellishment of his estate, by enclosing and planting. Without this healthful and interesting employment, a man of keen mind and independent fortune, residing in the country, must resort to the less rational amusements of hunting and shooting, or to the dull pursuits of angling, to occupy his vacant time.

'A considerable number of farmers in this county have become proprietors of respectable estates, acquired by their own, or their fathers' successful and enlightened industry; and they still continue to exert upon their own lands, and on farms belonging to other proprietors, the same unremitting judicious attentions, by which they, and many of their brethren, have realized handsome independences. Indeed farming, at least in this and other improved districts, is not now to be carried on, either for the interest of landlord or tenant, unless with the command of a respectable capital, and directed by ingenious and persevering industry.

'It has been reported of a great landed proprietor in a distant county, that he expressed high indignation on hearing that one of his tenants had bought a small estate; supposing, doubtless, that on such occasions the tenantry must have enjoyed profits from their pos-

sessions, which, under other circumstances of management, might have gone into the coffers of their landlords. But our more enlightened Berwickshire proprietors know well, were their tenantry to have insecure holdings, and to be always racked to the utmost possible payment, they could neither improve their farms, nor acquire any opulence, and consequently could not give large advances of rent upon every successive lease, to enrich their landlords. Were it possible to reduce the present affluent and intelligent race of farmers, to the miserable situation of our ancient *teinders* and *thirders*, or of the *metayers* in many parts of the Continent, instead of thereby adding to their own riches, proprietors would reduce themselves to deserved beggary, along with their oppressed dependants; and, if universally followed, would involve their country in certain ruin. In this report, the connexion between English landlords and their tenants at will, and the consequent necessary imperfection of husbandry, wherever that system prevails, cannot be taken into consideration; yet it may be allowed to say, that such tenantry never can improve the land to the utmost, and can never, therefore, afford to pay the full rental value for which their possessions would let, under the security of leases of reasonable endurance.' p. 51, 52.

We do not know the landed proprietor alluded to in the foregoing passage; but, whoever he may be, and whatever may be his rank, the justice of Mr Kerr's observations must be admitted by every liberal-minded person. To cultivate arable land, requires such a large capital stock, that he who farms extensively could live decently upon the interest of that stock, without running any risk, or undertaking any trouble. Now, when that stock is devoted to the cultivation of the soil, its owner is certainly entitled to expect some reward for his trouble; and, if active and industrious, even to save money, which he may either lay out in the purchase of land, or in any other way more agreeable to his wishes. And what right has the proprietor of such land to complain at the success of his tenant? None at all. He has rather cause to rejoice at having got a good tenant;—one who is capable of cultivating the land in a sufficient manner;—one who is able to make good his engagements;—and, in short, one who conjoins patient industry and judicious activity. No estate in Britain was ever improved by poor tenants; and as seldom has any been injured by tenants of a different description. Besides, were the subject viewed in a different light, it might be asked, upon what pretence should proprietors feel indignation at the prosperity of their tenants? Land, like every other commodity, is now disposed of for a limited term, at the very highest price it will bring in the public market. If the market value of the article increases after the bargain is concluded, is the tenant to be blamed for such an alteration? Certainly not. Had markets

taken

taken a different course, and the value of land been depressed, the tenant's rage might, with equal propriety, and with much more reason, have been excited against the proprietor. The one may be ruined by a fall in the value of land; whereas the other, from the nature of our laws, is always sure of receiving the sum stipulated, if it can be found upon the premises; consequently can never suffer a material loss, even though the tenant may be ruined and beggared.

Speaking of the Property-tax, Mr Kerr favours us with several just and appropriate remarks on the consequences of that tax to the tenantry of Scotland. Were tenants actually in possession of the income for which they are rated, few would complain at being assessed one tenth thereof in support of the public service; but, as income is rarely drawn from land equal to one half of rent; and as, in numberless cases, especially in the first years of a lease, it is morally impossible that income can be derived from land, a revision of the act, by which it is laid on, seems to be a necessary measure. At all events, the tax is an unequal one; and it must remain so till a Court of Appeal is appointed, before which tenants may be heard, and have their grievances redressed. Even though the criterion assumed for ascertaining income was considerably modified, the tenantry must suffer, unless a Court of Appeal is erected. No doubt, if the criterion was reduced to one fourth of rent, or even to one third, as suggested at the meeting of Scotch Members of Parliament in London, the sufferings of individuals would be lessened: but why a tenant should be assessed for income which he does not actually possess, and why a distinction should be made betwixt him and a trader, are questions of political economy, too mysterious for us to investigate.

Mr Kerr says—

'It cannot be overlooked, that the system by which the property-tax is assessed upon farmers, does not appear to be equitably parallel to that which regulates its exaction upon the other classes of the community. For farmers, the utmost stretch of their rents, or the utmost valuation which their lands would bear, in prospect of a new lease, is assumed as the measure for their payment. In this way, they are made to pay a large per centage upon a presumed income, of which they very often do not enjoy a half, a quarter, or an eighth part, more especially during the first five, six, or seven years of a new lease, upon a farm that requires extensive and costly improvements. So far from a farmer, in such circumstances, enjoying any income, commensurable by the amount of his rent, it often happens, that, to pay rent, wages, and taxes, to maintain his family with the utmost frugality, and to improve his land, he has to expend for several years from his capital, or by means of borrowed money,

a sum little, if at all inferior, to his actual rent; often much larger. In this case, certainly, and until his debt, or capital, is replaced, from the excrescing produce of his farming improvements, he may be fairly and equitably pronounced to have no property producing income, that ought, in justice, to become the subject of taxation, upon the general principles of the property-tax, as applicable to all other descriptions of subjects. Upon a farming concern of the above description, carried on by a copartnery, there certainly could be no profits to divide, so long as its affairs continued in the predicament here founded on. The farmer's proportion of the property-tax ought to be levied upon his actual profits, precisely as in the cases of manufacturers and merchants; and surely a merchant or manufacturer, who has adventured a large capital upon a distant voyage, would not be assessed to the property-tax on that adventure, until the returns of the proceeds had produced an actual profit.

'Farmers, like all other men engaged in business, besides the differences already mentioned, and those which arise from adverse seasons and fluctuations of markets, are liable to losses in trade from the bankruptcy of corn-dealers, butchers, wool-buyers and jobbers in sheep and cattle. But by the present principles of the property-tax, as applicable to them, they are compelled to pay as much under the most adverse circumstances, even though tottering upon the brink of ruin, as when their affairs are prospering to the utmost of their wishes. All other descriptions of the subjects are exempted from the property-tax under such circumstances of loss, in so far as these tend to diminish or annihilate their yearly incomes.

'Three hypothetical cases may be stated, for which parallels may be found, with infinite intermediate gradations, in most thriving agricultural districts. A. B., towards the close of an advantageous lease, pays 1000*l.* a year of rent; his farm is valued for the property-tax at 2000*l.*; and he perhaps derives 1500*l.* a year, profit from his farm. C. D. has entered to an improved farm at 2000*l.* a year of rent, and perhaps clears 500*l.* a year of profit. E. F. has taken possession of a farm at a rent of 2000*l.* a year, requiring extensive improvements, from which he can derive no profits whatever for several years, and on which he must expend perhaps 5000*l.* of capital before he can possibly look even for the commencement of reimbursement, far less for any actual profit. All these three, however, are chargeable to the property-tax, upon similar hypothetical principles of presumed profit; while, in strict equity, A. B. ought to pay three times as much as C. D.; and E. F. ought to be exempted. Such, unquestionably, would be the relative situation of these three, were they merchants, manufacturers, or West India planters, in similar circumstances as to profit.' p. 55—57.

The nature of *feuholding* being somewhat different from the tenure called *copyholding* in England, we extract the following paragraph for the information of our English readers.

'*Feu-holding.*—

'*Feuholding.*—Great numbers of small properties, and even some of considerable extent, are held by feu-rights, or by what is equivalent to charter, infeftment, and sasine, under those who hold directly from the crown or prince. In those cases, the immediate holder from the crown or prince is called the subject-superior; and the person holding under him is termed the feuar, or subvassal. This last is absolute owner of the soil, and of every thing or circumstance connected with it, *de cælo ad centrum;* and is said to possess the *dominium utile*, while the superior has right only to the naked superiority, called *dominium directum*, but which includes the whole political rights attached to the property; unless when the superior has reserved, in the original grant, certain rents and casualties of superiority; or where he may have reserved the mines and minerals, with the right of searching for and working these, upon payment of surface-damages. The vassal, upon the transmission of the feu into new hands by succession, is bound to take out new investitures from the superior, in the nature of a charter, with consequent infeftment and sasine, on payment of the ordinary fees, and one year's feu-rent, as fine of renewal. When the property changes, by sale, to what is called a singular successor, a different fine becomes due to the superior, which is either legal or conventional, but is never arbitrary, or at the will of the lord. By paction, the original grant, or feu-disposition, often determines the amount of this fine,—usually the payment of one year's feu duty in addition. When that is not the case, the law has fixed it at a full year's real rental value of the subject at the time of renewal. These dues are termed casualties of superiority, as only happening contingently.' p. 68, 69.

Under the head of *General Remarks*, section 5th, chap. 3d, we have several excellent strictures upon a subject which some years ago met with much discussion. We are clear that all farm-servants, who are married and in possession of a house, ought to have cows kept for them by their masters; because a full supply of milk is of great advantage in rearing their families: but, on the other hand, we are hostile to the measure of giving them ground, especially for raising winter food; considering every thing of that nature not only as injurious to agriculture, but unfriendly to the interest of the cottager. The same things may be stated against the absurd measure recommended by some people, of taking cottages out of the farmer's hand, which, if generally carried into execution, would in fact be productive of the most mischievous consequences.

'Much has been said, of late years, about accommodating the laborious poor with small patches of ground for cultivation, and giving a cow's grass to each cottager, certainly with the most benevolent intentions. The reporter is anxious to avoid all controversial matters, and wishes merely to describe the actual state of Berwickshire as relative to agriculture; yet he hopes a few general observa-

tions on this subject will not be considered as stepping beyond his province. Day-labourers have no leisure for attending to the cultivation of any extent of land; and therefore a small garden for potatoes, for cabbages, and other pot-herbs, is perfectly sufficient for the accommodation of each. Any thing further would break in upon their time of labour for hire; and the farm-work of Berwickshire is fully sufficient, in all seasons, for all that are willing to work.

'For grazing the cows of such villagers as choose to have that accommodation, small grass fields may always be hired yearly, in this county, in the neighbourhood of every town and village; and it is now very common for the villagers to form clubs or copartneries, for taking such pasture-fields at the annual auctions, for their cows and horses. The Berwickshire accommodations for married servants, in regard to cows and potatoe grounds, have been already slightly noticed, and will be more particularly explained in another division of the report.

'Were a day-labourer provided in a cow's grass, and land for cultivation at an undervalue, besides the obvious loss to the proprietor, it would, for the most part, render him lazy, and useless to the neighbourhood; he would either be in constant miserable poverty, from his indolence, or so independent that he would refuse to work, unless paid much beyond the average wages. To make him a small farmer at an adequate rent, would deprive the tenantry of his labour altogether, and would force him to work far beyond the ordinary exertions, to enable him to live in misery, and to pay the ordinary rents. Such a plan, in this county at least, would establish a new class in rural society, for which there is no place, in the present scanty population. Even were the population superabundant, it is very questionable if such a description of people would be useful to the community, or decently comfortable to themselves and families. In years of ordinary fertility, they might make shift to subsist; but, in years of scarcity, they would necessarily be subjected to misery and famine, and would at all times intercept the supplies from the manufacturers, the inhabitants of towns, and the military and maritime protectors of the country. Every one of them can at present procure, at the current price, as much ground as suffices to grow potatoes for their families, and may, if they choose, keep cows on the principles already stated. Even the usefulness of cow-keeping in small villages, is necessarily limited to the demand for milk; and it has happened frequently, from the supply being beyond the demand, that village cows have not nearly paid their expenses. In every parish, the justices ought rigidly to debar the keeping of cows or horses by such cottagers as have not taken adequate pasture for their regular maintenance; as some, under pretence of pasturing by road sides, are guilty of great depredations on the neighbouring farmers; turning in their cattle under night, even into hay fields and standing corn, and stealing clover, hay and corn sheaves.

'Were those labourers or hinds, who belong to the continually recurring

curring operations of agriculture on each farm, to be placed in situations either altogether, or even partially independent of the respective farmers to whom they are attached, instead of assistants they would become incumbrances, and would completely counteract the tenants' power of cultivating their farms with energy and propriety. They would effectually prevent the farmers from thriving, from doing justice to their land, and, consequently, from paying any thing like adequate rents; and would themselves ultimately become useless, dissipated, and worthless paupers. As well might the legislature impose upon the nobility and gentry a set of privileged coachmen, butlers, and land-stewards, independent of their controul, as that the great landlords should fix cottagers upon their tenants, as hinds or ploughmen, hedgers and labourers, over whom the immediate masters had no direct command, and could not turn them off for better behaved servants. To follow out this subject, would lead to discussions for which the reporter has neither room nor inclination.' p. 104—106.

Mr Kerr warmly supports what is called the alternate system of husbandry, and describes the benefits flowing from it with singular precision.

'In the occupation of their land by the tenants and by farming proprietors, so generally as to be almost universal, aration and pasturage follow each other alternately, to the great advantage of both. By means of the former, rich crops of grain are raised, and abundant store of turnips, clover and cultivated grasses are supplied for the winter food of horses, cattle and sheep. By the latter, the soil is continually renovated, and preserved in vigorous fertility. And by this alternation, the particulars of which will be detailed hereafter, much larger quantities of beef and mutton and grain are produced for market than could be derived from the two branches constantly pursued on the same quantity of equal land, in separate farms, or on separate fixed portions of the same farm.

'Under this system of alternation, judiciously conducted, it may confidently be asserted, that a farm, of 1000 acres, for instance, will raise as much grain as one of equal size entirely under perpetual tillage, and will produce, in addition, as much beef and mutton and wool, as a separate farm of 200 to 300 acres under permanent grass. If this estimation be well founded, of which the reporter has no doubt, this alternate system is obviously of superior profit to the tenantry in the first place, to the landed interest secondarily, by increased rents, and to the public ultimately and always, in the proportion of at least 25 per cent. beyond what can be produced from the two branches separately pursued on the same extent of equal land.

'The effects of this superior system upon the floating and accumulating active husbandry stock of the kingdom at large, upon the facilities for encouraging and supplying an increasing population, for extending

extending manufactures and commerce, for replacing the men that are lost to the state in war, navigation and colonization, and for assisting to support the continually increasing pressure of financial arrangements, must be vast. These effects form the commencement of a solid system of political arithmetic, in a continually advancing ratio of amelioration, which belongs not to the present object to investigate, and which the reporter gladly leaves to be prosecuted by others more conversant in such studies and discussions.' p. 114–16.

In the sixth chapter, which professes to treat of *enclosing*, Mr Kerr mentions, that a great part of Coldingham moor, divided in 1777, has been found unimproveable by the plough, and thinks that, 'had the money laid out in abortive attempts to improve that waste into good corn and grass land, been judiciously employed in fencing and planting the whole, it would, by this time, have amply repaid thrice the value of its fee-simple, and all charges, with compound interest.' Here we perfectly agree with him. The account of the division of Chirnside Common, may be useful to our readers; therefore, shall be presented entire in next Number.

A very good account of the process of summer fallow is given; and it is with justice maintained, 'of every farmer on strong soil, that his affluence and prosperity will always be in direct proportion to the extent and excellence of his fallow break, every thing else being well conducted.' Sentiments of this nature are so congenial with those repeatedly urged in this work, that we cannot help recommending the section which contains them to the serious consideration of antifallowists. The turnip system of Berwickshire is also amply illustrated; but, as we have more than once explained that system at considerable length, it seems unnecessary to enter upon it at this time.

Speaking of soiling, Mr Kerr expresses a favourable opinion of that practice. He says—

'It is generally allowed, that soiling is singularly advantageous. By it the same quantity of stock can be fed from a greatly less extent of land, than by pasture. A large quantity of excellent disposable muck is produced, at a season when none at all can be had without that practice; and which muck, produced by the same stock on pasture, would be scattered over the grass land; much of it wasted by evaporation, and much of it carried away by insects. Besides, that the pasturage of horses is apt to injure sheep stock going on the same land.

'This soiling process, however, is chiefly due to the clover crop; and the tares only serve the highly useful purpose of continuation between the two cuttings of that crop.

'The value of an acre of tares may probably be equal to that of an acre of clover; and may average from six to eight guineas, according to the soil and seasons.

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'In summer 1806, the reporter kept six work horses and a riding poney in the fold-yard upon cut clover and tares, for four months; and having fortunately preserved the memorandum of the extent of ground cut for this purpose, has it in his power to give something like an estimate of the advantage. Two acres of first crop of clover were expended, and half an acre of tares before the clover would cut a second time. These, at seven guineas an acre, is 18*l.* 7s. 6d. It required twelve acres of second crop clover at 30s. (18*l.*) to carry on the horses.

'The expense of cutting and leading may certainly be considered as fully compensated by the value of the muck produced; so that the whole expense of feeding seven horses during four months, amounted to 36*l.* 7s. 6d. These would certainly have required six acres of the clover in pasture: consuming both crops, and estimating these at the same value with the two cuttings, 8*l.* 17s. an acre, the horses would have cost, for the same period at pasture, 61*l.* 19s.; leaving a fair profit of 25*l.* 11s. 6d. in favour of soiling; or 3*l.* 13s. for each horse. Could the same plan be extended on the same farm, to its cows and young cattle, the profit upon the whole would fall very little short of a hundred pounds a year, upon a hundred and thirty acres. But soiling to that extent would require more accommodations than the farm possesses, and would too much interfere with the hay crop, which cannot be wanted for winter use.' p. 261–3.

We have already mentioned, that lime and marl were the basis of Berwickshire husbandry, when improvements were first introduced. Lime is still used to a considerable extent; and, latterly, a new practice (new in Berwickshire at least) has been introduced, of mixing it with good earth, and applying the whole as a compost to the soil. This is a commendable way of using lime in the second stage; therefore, cannot be too extensively followed, where materials are at hand. Amongst other things, respecting lime, Mr Kerr states, that

'Lime is a most especial foundation of the improved husbandry of this county, into which it is almost all brought from the south side of the Tweed, at great expense, or is landed at the port of Eyemouth from kilns on the coast of Northumberland and Durham. The ordinary allowance to the acre of land, which has not been recently limed, is from thirty to forty bolls of lime-shells unslacked, each containing about four Winchester bushels; and consequently from a hundred and twenty to a hundred and sixty bushels to the acre. Before laying on the land, it is allowed to slack in the air, so far at least as to fall to powder; or it is sometimes slacked by water led for the purpose. When in a powdery state, it is equably spread over the land from the carts by shovels.

'Including first purchase, carriage home, and spreading, lime may fairly be reckoned to cost on an average half a crown the boll, or sevenpence halfpenny the bushel; so that the expense of liming

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an acre of land will amount to from three pounds fifteen shillings to six guineas, or five pounds on the average. Hence, to go completely and effectually over a farm, of six hundred acres, may fairly be said to cost the farmer three thousand pounds; and on most farms the operation has to be repeated once during a nineteen years lease, at an expense of six thousand pounds; averaging about three hundred pounds yearly on the farm, or ten shillings yearly on each acre.

'On the first introduction of liming in this county, a much smaller quantity was found efficient; and from twenty to thirty bolls was then usually given. But experience shows that, on repetition, the dose has to be increased. And in East Lothian, where liming has been much longer generally established than in Berwickshire, eighty bolls, at the probable expense of about ten pounds the acre, are said to be now frequently given. In that county, the lime is now often formed into a compost, by mixture with earth, either the surface of a thick soiled head land, or gathered from old hedge banks, roadsides, and the scourings of fence ditches. But as that practice has not made much way hitherto in this county, no particular account can be given of its effects, which are said to be highly beneficial.

'Indeed, since the first draught of this report was written, considerable progress has been made in this new manner of applying lime, mixed with earth into a compost; and, from its evidently useful effects, it is every year gaining ground. Farmers in every corner are seen anxiously collecting good earth from every accessible source, and forming it into composts with quicklime; which, when intimately mixed, they spread over the land.' p. 367—369.

A new kind of manure is mentioned by Mr Kerr, viz. spoilt herrings. We hope that herrings are not often spoilt; therefore seldom used as manure to the soil. Still, as things of that nature may happen, his account may be acceptable.

'Eight or ten years ago, a cargo of spoilt herrings was sold for manure at Eyemouth, of which the reporter procured 200 barrels. These were spread upon land intended for turnip fallow, at the rate of 25 barrels to an acre, and ploughed under before winter. In the ensuing spring, when the land came to be again ploughed, hardly the smallest vestige, even of the heads and bones, were to be seen. Without any other manure, the turnips turned out a full crop; and the subsequent grain and grass crops were perfectly satisfactory. The herrings were bought for less than a shilling a barrel, so that the land was manured at a very cheap rate. This, however, was a mere incident, as no such opportunity may ever occur again.' p. 378.

Some excellent observations are given about making and repairing roads, with a correct account of the new line of post road betwixt Berwick and Dunglass bridge; but we are sorry that our limits will not allow us to notice these matters. Upon the whole,

a full, and, we believe, a correct, description of Berwickshire husbandry, is given by Mr Kerr; and the only fault we have to the performance is, that it is rather too diffuse, whilst the arrangement, in several respects, may be considered as somewhat complicated. The author, however, is not to blame for these things; having strictly adhered to the plan prescribed to him by the Board of Agriculture—a plan wherein so many particulars are involved, as to render the drawing up of a county report one of the most difficult tasks that can be undertaken. In fact, the sections are now so wire-drawn, that it is almost impracticable to avoid repetition, even when the greatest attention is exercised by the reporter. N.

A Sketch of the System of Husbandry adopted in the most improven Districts of Scotland; and a General View of the Principles upon which it is founded. Drawn up for the Consideration of the Board of Agriculture, with a view of explaining how far that System is applicable to the less cultivated Parts of England. By Sir John Sinclair, Bart. Edinburgh, 1809.

THE husbandry of England, till within these few years, was always considered to be much superior to that of Scotland; and it would not be difficult to assign reasons why that primary and necessary art flourished in the southern, whilst it was neglected and despised in the northern parts of the island. Circumstances, of late, however, seem to be completely changed; for, whilst improvements have rapidly spread through the low country districts of Scotland, agriculture in England has generally remained in its former state, except, perhaps, in Norfolk, Suffolk, Essex, and one or two more counties. Were there the slightest doubt concerning the correctness of these statements, it might at once be removed by a reference to the rents actually paid in both countries; the result of which would clearly establish, that husbandry must be exercised in a different way in Scotland than in England, otherwise those concerned would soon be ruined and undone. It is believed, that many English proprietors are now beginning to reflect upon these matters, wishing, no doubt, to draw the same advantages from their landed property as are obtained by their Scottish brethren. To explain the present state of Scotch husbandry is therefore the object of Sir John Sinclair. It will be more difficult, however, to explain the causes which have retarded the improvement of English husbandry, and prevented farmers from paying rents of the same amount or value as are paid by Scottish farmers in every quarter. In fact, these causes are of

a complicated nature, though we trust they will be elucidated in a satisfactory manner by the Honourable Baronet in the treatise he is now preparing. It is only the introduction to that treatise which is now before us; but, judging that a more acceptable compliment cannot be paid to Sir John Sinclair, we select his account of '*The Causes which have contributed to the Excellence of Scotch Husbandry.*'

'Various reasons may be assigned, why the husbandry of Scotland should be of a superior description.

'The inferiority of its climate rendered it necessary to pay particular attention to every means by which so great disadvantage could possibly be counteracted.

'The small proportion of fertile land which it possesses, rendered it peculiarly valuable, and was a strong inducement to make it as productive as possible. Where nature is bountiful, man is too apt to become indolent.

'The skill and experience which the Scots had obtained in gardening, gave them a high idea of the produce which might be obtained from land, by due attention to its culture.

'It was in the counties which border upon England, that the improved system of Scotch husbandry began; and, at the same time, there commenced a useful rivalship between the Borderers of the two kingdoms, which tended to their mutual improvement.

'Many of the farmers in Scotland were not only well educated, and fond of perusing works on agriculture, and thence were, in a great measure, exempted from any prejudice in favour of particular modes of husbandry; but some of them also were accustomed to travel, with a view of acquiring useful information, and of comparing the improvements of other districts with the practices at home.

'The proprietors of land in Scotland were distinguished by the acquisition of useful, rather than of showy accomplishments; took a delight in rural occupations, and either improved their estates themselves, or encouraged their tenants to exertion.

'It became a fashion in Scotland to grant leases; without the possession of which, no material improvement, *on the part of the tenant*, can possibly be expected. Nor have *extensive* improvements taken place in any part of England, but where the same custom has prevailed.

'As soon as improvements began, the *rents of lands were greatly increased*; without the spur of which, neither industry in cultivation, nor economy in management, can be looked for. Oppressive additions ought certainly to be avoided; but, without a fair income for his land, no proprietor ought to part with a controul over his estate, more especially for so long a period as 19 or 21 years. A tenant, on the other hand, who obtains a lease of some duration, and on liberal terms in regard to covenants, can well afford a handsome augmentation, at least after the first two or three years of his lease have expired.

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'A considerable proportion of the most fertile land in England, till bills of division and enclosure were introduced, was actually debarred from improvement, by the common-field system; whereas in Scotland, for many years past, every farm was a distinct possession, or held in severalty.

'It was a circumstance peculiarly favourable to the improvement of Scotland, that the farmers in general were liable to no material burden but the rent they pay to the landlord, by whom the land-tax, and the stipend to the minister, were paid. Wherever there is any uncertainty as to the sums to be exacted, (more especially if the burden increases with the industry exerted), nothing can be more hostile to improvement.

'The expense of labour in Scotland is also cheaper than that in England. The servants employed in husbandry are more tractable, are satisfied with homelier fare, are less accustomed to waste their time and their wages in ale-houses, are more regular and constant in their hours of labour, have fewer perquisites, and are less addicted to debauchery.

'The circumstances of the Scots, when their improved system of husbandry commenced, rendered it necessary for them to study economy, to cultivate their land with fewer horses, with cheaper implements, and with a smaller number of servants; and hence originated a system of management, distinguished by two important advantages, *economy* and *simplicity*.

'In the more improved districts of Scotland, the farms are in general of a proper size for arable culture, namely, from 200 to 500 acres. Small lots are beneath the attention of an opulent and intelligent farmer. Much time is lost in the cultivation of small farms, and much expense must be thrown away, where the servants and cattle have not constant occupation; whereas, with a farm of a proper size, every hour may be advantageously employed. Grazing farms may be more extensive; but the best size of an arable farm is from 200 to 500 acres. Some farmers, at the same time, can advantageously cultivate a still greater quantity.

'The fields in Scotland (in general from 10 to 15 acres) are of a size better adapted for arable cultivation than the generality of those in England. The necessity of frequent turnings, by which much time and labour are lost, is thus done away. It is hardly possible, indeed, that a small field can be so completely ploughed as a large one, more especially where the form is irregular.

'Small fields, enclosed with hedges, are well calculated for the growth of herbage, but are unfavourable to the production of grain. A great deal of ground is lost; the hedges are a shelter for birds and vermin, and generally a nursery for weeds; and the grain produced near the hedges is uniformly of an inferior sort. In the improved districts of Scotland, on the other hand, the fields, though generally enclosed, are not formed into such small divisions as in England. Hence the country is not so beautiful to the eye; but the climate is certainly

certainly healthier, the soil more productive of corn, and the produce of superior quality.

'The convertible system of husbandry, or alternate crops of grain and green crops, including the abolition of fallows on turnip soils, is completely established in Scotland; and is by far the best mode that has hitherto been suggested for the productive cultivation of a much larger proportion of England than is generally believed to be the case.

'It has been justly remarked also, that the improvements in England took place at an earlier era than those in Scotland, before the human mind had fully ripened, and before a knowledge of mechanics and chemistry, or the habits of mercantile accuracy had been brought to any degree of perfection; and rules, to a certain degree advantageous, having been at once established, there arose a strong prejudice in their favour which it was difficult to eradicate. Whereas those in Scotland commenced at a more advanced and enlightened period of society, when great improvements had been introduced in the conduct of all sorts of business, and after a general spirit of inquiry, of industry, and exertion, had been excited.

'In the last place, the character of the Scots—industrious, economical, and persevering—would naturally enable them to reach a considerable degree of excellence in any art or science to which their attention might be peculiarly directed.

'These circumstances combined, will, it is believed, sufficiently explain, why the system of husbandry adopted in Scotland should have reached a considerable degree of perfection, and may, in various respects, be accounted a pattern for other districts, in so far as regards *arable cultivation*.

'In prosecuting this important inquiry, it is proposed to give some account of the following particulars. 1. The rents paid for lands in the more improved districts of Scotland; 2. The rotation of crops therein adopted, and the average produce of each crop; 3. The average value of such produce at the present prices; 4. The expense at which that produce is raised; 5. The implements of husbandry used by the Scotch farmers; 6. Their tillage system, depth of ploughing, &c.; 7. Their mode of harvesting grain; 8. The proportion of arable and grass land preferred by them; 9. The size of fields best calculated for arable cultivation; 10. The Scotch turnip culture; 11. The culture of potatoes adjoining to towns; 12. Their culture of beans and peas, and how far they consider the drill system entitled to universal adoption; 13. Their management of manure,—in particular, lime, dung, and composts; 14. Their mode of soiling cattle and horses, and the expense of maintaining them; and, lastly, any other miscellaneous articles characteristic of Scottish husbandry; to which will be added, an account of such practices, not hitherto much known in Scotland, as are the most likely to improve the agricultural system of that country.' p. 5—11.

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Though we entertain no doubt but that a clear and accurate picture of Scotish husbandry will be furnished by Sir John Sinclair, yet we are afraid that some matters may only be slightly noticed, which, in our humble opinion, will materially obstruct every attempt to improve the husbandry of the country proposed to be benefited. We have only leisure to offer one or two remarks upon these matters. In the first place, unless Sir John Sinclair probes his subject to the bottom, assigning the real causes which have brought about the improvement of Scotland, and recommending several changes in the political economy of England, slender benefit can be gained from the most finished picture of Scotish husbandry; because, till the moral and political obstacles in the way of improved agriculture are removed, the picture cannot be imitated by English agriculturists. To be more particular—Unless the honourable Baronet shows that the full value of land is not to be obtained from a tenant without giving him the security of a lease of a suitable length;—unless he shows that restrictive covenants, except in the concluding years of a lease, are eminently hostile to the interest of agriculture, and of no benefit to proprietors;—unless he shows that all common rights in land are adverse to improvement, and demonstrates the necessity of passing an act for holding all land in severalty;—unless he shows that tythes, poor-rates, and every variable public burden ought to be removed from the tenant, and sustained by the landlord;—we say, unless Sir John Sinclair recommends all these things, his treatise will, comparatively, be of sm all benefit, and that matters will continue nearly in the same state as they are at present. But we trust better things of Sir John, believing he thinks with us as to the causes which have retarded the improvement of English husbandry; and that he is well aware no material improvement can be generally introduced, till the obstacles we have condescended upon are in one way or other removed.

Lastly, As Sir John Sinclair knows quite well that the improvement of Scotland proceeded chiefly from the salutary enactments of its Legislature in the seventeenth century, we hope that these laws will be fully described, and the advantages flowing from them enumerated, when he comes to make up his report to the agriculturists of England upon the merits of Scotish husbandry. In fact, we consider the inquiries in which Sir John Sinclair is now laboriously engaged, to be the most important that at any time have come under his consideration; and believe that his character as an agriculturist, with posterity, will depend much more upon the result of these inquiries, than upon any of the measures which hitherto have occupied his attention.

N.

BRANCH III.

Agricultural Intelligence.

The weather through harvest was far from being favourable to the processes of the season, especially in the end of August and beginning of September, whereby a considerable part of the wheat crop was sprouted in several counties, to the great loss both of the farmer and the consumer. Afterwards, the weather was rather teazing and vexatious, than injurious to the several crops; and, ultimately, the whole were got into the stack-yard with less damage than is often sustained in seasons apparently more genial and temperate.

Something like the same opinion as was stated in last Number, may be given of the grain crops, except with regard to peas, which crop will almost be unproductive; therefore, of small advantage to the farmer, except as fodder for his working stock. Wheat, in many districts of Scotland, is not superior as to quantity, and much worse as to quality, than in the preceding year; but, in England, it is generally inferior, perhaps to the extent of one fourth, to a common average. Barley and oats, according to all our accounts, are fair crops. Beans better than last year, at least in Scotland, where the black canker, and other diseases, were rarely known upon the fields occupied by this valuable leguminous article.

As to the esculent crops, potatoes, in numerous instances, have proved defective, particularly upon wet soils; and, though a great breadth of land was occupied by this root, there is reason to presume that the markets will not be so well supplied as they customarily are. The quality is variable; and, as many were taken up under adverse circumstances, great care will be required in preserving them during frosty weather. Turnips prove rather better than could have been expected, considering the defective seed used in numerous instances, and the bad weather experienced when the seed and cleaning processes were going forward. The mild weather of October was favourable to the growth of this root; though, still, the crop is a short one upon all the wet soils, and in few cases so heavy as often witnessed.

The sowing of wheat was performed imperfectly, in many districts. In England, at least in some counties, it was alleged, that the ground was too dry for receiving the harrow; but, in Scotland, a very different account must be given; as, in the eastern districts, where wheat is most sown, the land was generally too wet for being harrowed with advantage. Indeed, the fallow fields were rarely got into sufficient order at the proper season. Being drenched with an excessive quantity of moisture in August and September, they never parted with it till turned up by the plough, after harvest-work was finished, and even then were tough and untractable under the harrowing process. Whether the next year's crop of wheat may be a good one, depends upon many circumstances, that grain being less affected by an adverse seed-time than any other: but one thing

is almost certain, viz. that a long rotation cannot be carried on upon any land summer-fallowed this year, because none of it was fallowed in a sufficient manner; consequently, fewer of the aboriginal possessors of the soil were removed, than commonly takes place in seasons when that radical process is substantially and completely executed.

Markets for grain have not been brisk for some time,—a circumstance which cannot afford any surprise, when the imperfect condition of the grain is taken into consideration. The importations of wheat from France into the port of London, and from America into Liverpool and Clyde, have in some weeks been nearly equal to one half of the quantity required for the ordinary supply. It is well that it was so; for, without an extraordinary supply, a kind of dearth would probably have been felt, at a period when so little wheat of home growth was in condition for being manufactured. A remark here occurs, and it is not an irrelevant one. The policy of the British Government has always been to encourage the importation of grain, and to discourage the importation of every other article. Now, as the culture of grain is the staple trade of Britain, employing more people than are concerned in all our manufactures, it is truly wonderful that so extensive and necessary a trade should be discouraged at home, and encouraged abroad, whilst it is demonstrable, that the fields of Britain are perfectly capable of producing a far greater quantity of grain than is required for supplying the actual population. We by no means object to the licenses recently granted for importing grain from countries with whom we are engaged in bloody hostilities: on the contrary, we consider the people of Britain as under great obligations to the rulers of these countries for supplying their wants, and relieving their necessities, at a period when they were unable to supply and relieve themselves. But it is melancholy to reflect, that the people of Britain, of its southern part at least, are exposed, at particular periods, to the horrors of dearth or famine, by the obstinacy of their rulers. We do not mean to enter upon politics. No; these things are left to other people. We merely contend, that the inhabitants of this island are periodically exposed to dearth and famine, for no better reason, than that the rulers of the country entertain such an antipathy against innovation, as to oppose every attempt made to renovate the system of agriculture established in England when William the Conqueror swayed the sceptre of that kingdom. Had not this been the case, most assuredly the common-field system, the bane of improved agriculture, would long ago have been abolished. In like manner, the antient tithe system would have been changed, and placed upon a footing not adverse to agriculture, had our rulers considered, that to provide a full supply of the necessaries of life, was a duty incumbent upon them to the people whom they governed. But matters such as these, however beneficial they may be to the great body of every state, are seldom much attended to by those to whom they are delegated; and, in this way, the country at large suffers from a neglect of its best and truest interests. It is quite obvious, however, to eve-

ry person who reflects upon the subject, that the necessaries of life might be increased in a twofold degree, were the political obstacles to improved agriculture swept away and removed.

When upon this subject, the meritorious endeavours of a gentleman, whom we have often had occasion to mention, namely, Sir John Sinclair, Baronet, cannot pass unnoticed; and we trust that his account of the improved agriculture of Scotland, where no political or fiscal regulations remain to obstruct that art, will be of eminent advantage to our Southern brethren. Sir John, at this time, with that assiduity which strongly marks his character, is actively employed in collecting materials for a treatise upon Scottish husbandry, in order that the causes which enable northern farmers to pay more rent (Sir John says double rent) than done by their English brethren, in a better climate, and with the assistance of better markets, may be sufficiently understood. The inquiry is both curious and interesting; and, whilst much light must thereby be thrown upon the system of husbandry adopted in Scotland, it must appear that the want of regulations, similar to those enacted by the Scotish legislature, in the seventeenth century, is in a great measure the cause why English husbandry has retrograded, at least why it has remained stationary and unimproved. These matters will no doubt be amply elucidated by Sir John in the treatise which now occupies his attention. Under this impression, we shall only add, that, without such an illustration, the brightest description of Scottish husbandry will be of little avail to the people of England, seeing that the laws and customs of the country in fact restrain the occupiers, and, in some cases, even the owners of land, from exercising their judgement in the management thereof, or introducing practices contrary to those already established. These things are well known to Sir John Sinclair; therefore, it is highly probable he will first attempt to explain to English proprietors the system adopted by their Scottish brethren, whereby the value of land has been so prodigiously augmented. He will then very likely argue, that, as the Scottish system has produced such immense advantages to the proprietors of land in that country, the same system, or something like it, should be adopted in England, otherwise that the full value of property cannot be obtained by the owners from those by whom it is occupied. In this way seed may be sown, which cannot fail, at a future period, to produce an ample crop. The soil to be cultivated, perhaps, is not the most favourable one, being bound up by prejudice, and hardened by custom and usage; but an opening, once made, may, in process of time, be increased so widely, as to allow the removal of these obstructions. It was long before the benefits of the Scottish legislative enactments were perceived, and longer before these benefits were fully enjoyed; though to them, and to the liberal system of connexion betwixt proprietors and tenants, must the improved system of Scotish husbandry be entirely attributed.

Thinking it may be of some advantage to the inquiry undertaken by Sir John Sinclair, we insert the letter and queries which he lately circulated amongst his numerous agricultural friends. Probably

some of the answers to these queries will appear in our next Number Sir John having kindly promised to favour us in that manner.

" Sir—Several of my most respectable friends in the agricultural line, and Sir Joseph Banks in particular, have strongly inculcated the idea, that it is a duty incumbent on a Scotch President of an English Board, to draw up a Treatise on the System of Husbandry adopted in Scotland, by means of which, the farmers of that country are enabled, in extensive tracts, to pay double the rent for the land they cultivate, compared to land of a similar quality and description in England; and in his communication to me upon that subject, Sir Joseph adds, " That agriculture has derived, is deriving, and will derive, more benefit from Scotch industry and skill, than has been accumulated, since the days when Adam first wielded a spade. "

" When thus called upon, in a manner so flattering to the agricultural skill and industry of my countrymen, it is impossible for me not to obey the summons; more especially, as I am deeply impressed with the idea, that the introduction of the simple, economical, and judicious system of husbandry adopted in Scotland, would double the value of many districts in England, and would render the British empire independent of other countries, for food, and for a variety of other most essential articles.

" I have to request, therefore, that you will have the goodness to favour me with your assistance, in carrying on so useful an undertaking, and, for that purpose, that you would be pleased to transmit to me, as speedily as the circumstances of the case will admit of it, (the sooner the more desirable), full Answers to the subjoined Queries. As soon as the Treatise which I propose to draw up is printed, I shall have the pleasure of transmitting a copy of it to you, with many thanks *for your friendly and public spirited assistance*, in the prosecution of so important an inquiry. I remain, Sir, your very obedient servant,

Charlotte Square, Edinburgh, 24th October, 1809. John Sinclair. "

QUERIES alluded to in the foregoing Letter.

" 1. What may be the size of the farm you occupy, in Scotch or English acres?—2. What may be the nature and quality of the soil, and subsoil?—3. How near is the farm situated to any town or village; to any navigable river; or to the sea?—4. What may be the number of fields into which it is divided; or the average size of each?—5. What the rotation of crops; the average produce of each crop, and the average value at the present prices?—6. What the number of farm servants, married and unmarried; and the wages and other emoluments they receive?—7. What the average number of persons occasionally employed in other operations about the farm?—8. What the number of work-horses, and the expense of maintaining them?—9. What the number of other stock kept on the farm?—10. What the number of ploughs and carts; and whether any waggons are used on it?—11. Is there a thrashing-mill; and is it wrought by horses, wind, or water?—Are there fanners; and how are they wrought?—12. What is the rent of the land per Scotch or English acre?—13. Is the farmer liable to any additional burden, for land-tax, assessment for the poor, stipend to the minister, or salary to the

schoolmaster; and to what amount?—14. What do you consider to be the best sizes for arable farms, in different districts, according to the capitals of which different farmers may be possessed; and why do you think such sizes preferable?—15. What sums, on an average, may it require to stock such farms; and what may be the average expense of the different articles?—16. What may be the expense of cultivation per acre?—*N. B.* If any circumstance should render it difficult to answer all these queries, have the goodness to communicate any information in your power, as speedily as possible, regarding the most material. The following particulars, also, are of great importance to elucidate: 1. The proper depth of ploughing both strong and light soils, for the different crops, and for a naked fallow: 2. How far the drill system ought to be adopted, both for green and grass crops: and, 3. The best mode of using lime, and dung, and composts."

As mentioned in our last, inquiries have been made by the gentlemen of the tax-office, respecting the bearings and consequences of the property-tax to the tenantry of Scotland; and a number of replies have been made from different counties to the queries circulated from the tax-office. We have not a copy of the queries by us, otherwise would have inserted them. In general, it may be stated, that they were not far amiss, and seemed to be drawn by a person who had a tolerable notion of the business to be investigated. That the tax, in the way it is levied, is an unequal one, few people are disposed to contradict; therefore, that relief of some kind, though very likely not to the extent claimed, will be obtained at the next sitting of Parliament, we have not the slightest doubt. Even those who contend that the great body of farmers enjoy income equal to one half of rent, admit that the rule of assessment adopted must be hostile to the interest of individuals who have met with losses, or who are so particularly circumstanced as to be unable to reap the full advantages that may be derived from farms under their occupation. A court of Appeal, or as it is called in one of the answers to the tax-office, a court of Controul upon the acting commissioners, to hear and determine complaints from those who consider themselves aggrieved, seems therefore a necessary appendage to the system under which the property-tax is administered. Were such a court established in every county, and the third of rent assumed as the extent of income, as proposed in April last by the Scotch members of Parliament to the Chancellor of the Exchequer, the farming interest, it is believed, would be quite satisfied. None of the profession, so far as we know, have the slightest objection to pay one tenth of income, *actually enjoyed*, towards the support of Government; though nearly the whole contend that, to rate them according to an assumed criterion, which, in nineteen cases out of twenty, is fallacious and delusive, without giving them liberty of appealing against the assessment which follows, is not treating them in the same way as is done to other members of the community. Upon this point there can be little dispute; indeed, if a fixed rate is retained, which probably will be

the case, the farmer cannot be relieved unless courts of appeal are established. To suppose that the income of individual farmers tallies in every case exactly with their rents, is nearly as ridiculous as to suppose, in the event of the Legislature putting a tax upon *common sense*, that the same was to be levied upon farmers in direct proportion with the rent covenanted to be paid by them to their landlords.

As much imperfect Ruta Baga seed was some years ago palmed upon the public, to the great loss and detriment of those who purchased it, we with pleasure intimate, that a considerable quantity of that seed was this year saved in the highest perfection, by John Gibb, gardener at Linton, East-Lothian, from plants reared by that eminent agriculturist, George Rennie, Esq. of Fantassie; who, for many years past, has been particularly careful of breeding from the best roots, and constantly displayed a vigilant attention to preserve them from all communication with other plants. Notice will afterwards be given of the price, and the name of the person or persons in Edinburgh by whom the seed will be sold, for the information of agriculturists at a distance. We shall be happy to make similar intimations in next Number, with regard to the seed of common turnips, as many complaints reached us last year respecting the quality of the seed generally used.

A case will be reported in next Number, interesting to the public, and of considerable importance to the farming interest of this country. In substance it may be here stated, that twelve men, belonging to a regiment of Militia, marching to other quarters, were billeted on a respectable farmer; and that those men, refusing to take a loft for lodging room, found their way into the farmer's house, headed by two of their officers, and took possession of the rooms, leaving one, however, for the use of the farmer and his wife. The farmer brought an action before the Judge Ordinary of the bounds, and finally prevailed; damages, and the whole expenses, being decerned against the officers.

We notice, with much pleasure, that the cause of that worthy man, Mr Meikle, the inventor of the Thrashing Machine *presently* in general use, now stands a fair chance of being taken up by the public in a suitable manner. Mr Meikle has arrived at the advanced period of 91 years of age, without receiving that reward justly due to his merits as an excellent civil engineer; and more particularly due to him, on account of the Thrashing Machine, by which the public in general, and the landed interest in particular, have been so highly benefited. We know well that doubts have often been expressed by half-informed people, whether the Thrashing Machine was invented by Mr Meikle; though knowing, as we do, the history of the invention from the beginning, we are almost sure that no man, uninfluenced by prejudice, after investigating the facts and circumstances appertaining to the invention, can give a verdict hostile to the interest of that gentleman. The cause of this venerable and truly good man is now espoused by Sir John Sinclair, Bart., who, fortunately for the

country, has rarely failed in any measure taken under his protection, and will soon be submitted to the consideration of the public in a regular shape. In the mean time, the CONDUCTOR of this work acknowledges receipt of a letter, from a true friend to agriculture, which contains the following paragraph. 'I am happy to learn, that the case of Mr Meikle, inventor of the Thrashing Machine, has at last been fairly taken under consideration; and you will oblige me much, by paying the enclosed Five Guineas to the fund to be appropriated for rewarding Mr Meikle's eminent services.' We have only to add, that, when the plan for rewarding Mr Meikle is maturated, and ready to be acted upon, the same will, without loss of time, be laid before the public, from whom an ample support is reasonably expected.

SCOTLAND.

Kirkcudbrightshire Quarterly Report.

THE harvest was concluded in a superior manner to what was expected, notwithstanding the lateness of the season. In some places, the crop, in the beginning of harvest, was stacked before it was properly winned, and suffered considerably on that account; but, in other respects, the harvest has been good. The bulk exceeds what was expected early in the season; and oats that have been made into meal, bled well. Potatoes are a very irregular crop, and will be below average. Never have we experienced a better wheat seed time; and never, in the remembrance of the inhabitants of the present day, has there been so much sown in this district; but prejudice is quickly giving way to improvements; and it is hoped, from the exertion of many spirited gentlemen who have formed themselves into a society for the encouragement of agriculture, that this county will soon feel the beneficial effects of improved turnip husbandry, for which it is so eminently calculated. The cattle markets are continuing pretty high; but little or no grain has as yet been sold. For a few days past, a severe frost has prevailed; and, during last night, the hills have been covered with snow.——16*th November.*

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

SIR, *Dumfris-shire November*, 1809.

WITH a view to break the uniformity of the reports, which you receive and publish, relative to rural affairs, and to solicit from your numerous and respectable correspondents a more precise and variegated arrangement. I beg leave to send you the following letter; and am, Sir, your obedient Servant.—PASTOR.

'The *seasons*, in the course of the year 1809, have been remarkably varied. A severe winter, followed by a dry cold spring, and the severity of storm, and even snow, desolating the first days of June, appeared exceedingly portentous! The farmer wished for warm weather and refreshing showers. His wishes were, so far, gratified: The months of June and July were fine and warm; but little or no rain falling, a powerful drought succeeded. When rain fell at last, in August, it continued to descend in showers, daily, for a month. The first part of harvest, was productive of damage and apprehen-

sion; but the latter part effectually saved the remaining crops; and the re-commencement of winter has been most favourable to the labours and hopes of the farmer. The *produce* is very unequal indeed. In deep and rich lands the crops were luxuriant; in gravel and sand, and in all thin poor soils, they were exceedingly poor and light. Early corns in rich lands, not being laid by the rains of August, until they were well advanced in ripeness, proved rich and trusty, and are yielding amply in the barn. Some barley began to whiten in July, before the rains fell, and the grain proves under size. Cold oats, in soils of a moderate quality, not too rich for them, were excellent. The farmer has felt how important it is for him to select seed corresponding to the soil, and to sow early corns only in good land, where it is unsafe to sow cold seed oats. He has also found how interesting it must be for him, to lay on manure according to the state of the soil, varying the quantity greatly, even in the same field. Meadow hay was a fortnight later than usual, and is at least one fourth lighter, in the stack. Oats turn out something below a full average crop. Wheat has proved most unequal in the sheaf: It grew well, in general; but some fields were totally lost by the blight, while others not far distant were perfectly safe. Potatoes are considerably under the produce of last year, when the crop was indeed uncommonly abundant. The seed of turnips vegetated in July; but the young plants were overpowered by the drought and the fly; and when the rains fell, at last, in August, they continued so long as to impede the dressing of the soil: of course, this crop is greatly below par. The pastures became pale and even brown, by the latter end of July, but they revived under the rains, and continued rich and fine. *Observations* led to remark, in the fields of sown hay, that most of the plants of ryegrass (Lolium perenne) failed; and that an uncommonly large proportion of goose grass appeared. In the garden, the whole crop of black currants was blasted; but to make amends, the season which was so unpropitious to the Ribes nigrum, encouraged, in the woods and uplands, an immense crop of blaeberry, (Vaccinium Myrtillus). On the meadows the best and earliest plant, viz. (Poa trivialis) or common poa, failed entirely; while a very large proportion of Lotus corniculatus, or birds-foot trefoil, appeared, loaded with gold-coloured blossoms, and rich and succulent stems and leaves. In the corn fields, increasing quantities of the rough corn poppy appeared, with its crimson flowers, and large dark seeds, numerous in the capsule and rich in taste, when broken, and in meal. The season has also planted, in the corn fields, a greater than ordinary proportion of the rank and noxious but showy weed Clerysanthemum, in both its varieties—the great white ox-eye, and also the common yellow corn marigold.

Markets of grain and meal rose considerably, and are now stationary at 3s. 4d. per stone of oatmeal; 13s. per bushel of wheat; 1s. 8d. per cwt. of potatoes; 1s. per stone of sown grass hay; 10s. per stone of coarse wool of black faced sheep; and 31s. 6d. per stone of Cheviot wool. The season, which has been productive of such uncommon effects in the fields, gardens and meadows, has also been

marked for an unusual extension of the stitch fever, Pneumonia; which has proved fatal to many persons in the decline of life.'

Letter from Ayrshire, Nov. 21.

'THE rainy season continued till towards the middle of September; but, as it was latterly either accompanied with, or succeeded by good breezes of wind, the rain did little injury, either to the standing corn, or to what had been cut down. From that period to the present time, we have had a course of the best weather ever seen at this, or almost any season of the year. Except partial showers, we have had no rain for nearly two months. This caused the harvest work to proceed rapidly and pleasantly; and it is very rare indeed that the crop is got collected into the barn-yard, in this county, in such a good condition. Except in some few cases, where people may have hurried it in too soon, I don't suppose there can be a spoiled sheaf in the whole county. It is pleasant, as well as surprizing, to think what a change a few weeks can produce. In the former part of the season, ruin stared the farmer in the face. A long tract of rainy weather drenched the fields, softened and lodged the crops, seemingly past redemption; and little farming work could be done, or done to purpose. All these things are now as if they had never been; and the face of the county is entirely changed. This will be a lesson to teach farmers confidence in that promise, that 'summer and winter, seed-time and harvest, will continue while sun and moon endure.' It is generally believed, that oats and peas and beans are fully an average crop. Wheat (of which a very considerable quantity is now sown), and barley, though both tolerably good, are not reckoned to amount to an average. All the different species are considered as being of good quality; and, in so far as they have been yet tried, yield well, both from the sheaf and in the mill. The wheat, indeed, in some cases, is not so plump and full as in other years, and is darker in the colour; but I have not heard that there is any thing of smut or mildew worth the mentioning. The whole is sound, though somewhat smaller in the grain than usual; and that, perhaps, is only in a few cases. The greatest deficiency is in the article of potatoes: in many places there is not much more than half a crop. The fine dry weather has greatly recovered the turnips; and especially the mildness of it, resembling summer weather, has caused them to swell beyond expectation. The same cause has rendered the fallows in fully as good a state as we have any reason to look for in this moist climate; so that the wheat sowing has been carried on under very favourable circumstances; and a greater breadth of land has been sown this year than usual. As we have no proper grain market yet in this county, prices cannot be accurately ascertained; and no doubt much speculation is afloat. Wheat is from 45s. to 50s. the boll, 4 bushels; barley, 8 bushels, the same; good common oats 30s. the 8 bushels; and potatoe-oats always give 3s. or 4s. more. Meal, at last market-day in Ayr, was 1s. 9d. the peck; and potatoes, from the field, are 10s. and 10s. 6d. the boll. Cheese, of which vast quantities are made in the county, and of a superior

quality, is selling from 12s. to 14s. the stone of 24 lib.; and butter from a guinea to 25s. do. Butcher meat is at such a price as to indemnify the grazier; beef is from 10s. to 13s. 4d. the stone of 24 lib. The average of mutton may be about 10s. There has of late been a great spurt in the cattle market: the demand has been very brisk; and it is said the prices have been as good as at any time for seven years past. In short, the farmers in this county have this year no ground of complaint. Every thing has ultimately turned out favourable for them: they have had a tolerably good produce, and a ready demand for it.

'While such a dark cloud envelops our political horizon, it is pleasant to reflect upon this increasing demand for agricultural produce, because it is the best symptom of the increasing trade and population of the country; and this, again, if any thing, is our best security against the terrible calamities with which we are threatened. In this view, I cannot help mentioning with pride the increasing improvement of Ayrshire. If it meet with no obstacle to retard its progress, it will, in a short time, become one of the finest, as it is one of the most beautiful, counties in Britain. I am happy to inform you that you will, in a short time, have a full account of it, as there is a gentleman just now making a complete agricultural survey of it, for behoof, and under the patronage, of the Board of Agriculture.'

Tweeddale Quarterly Report.

The weather was unfriendly to harvest work, there being less or more rain every day during the month of September, consequently the grain crops were very critically situated. Through October the weather was good, and allowed grain to be carried to the yard in excellent condition. Oats are a bulky crop, though, as there is a large mixture of greens, the produce will not equal what might have been expected from a well ripened crop. Barley is well harvested, but will scarcely amount to an average crop. Indeed, the number of bolls cannot be expected this year from the same bulk, seeing great part of the crop run much to straw; whilst, in other cases, a considerable proportion was not perfectly ripened. Turnips have improved remarkably of late; and, though not near an average crop, will be much weightier than was expected. The early sown fields, which had the most promising appearance, have suffered by shooting, being injured by the very cause which improved the late and bad fields; yet, as two or three days of keen frost ensued last week, the shooting may be considered as effectually checked. Live stock of every description is in good condition and in great demand, having experienced a rise of at least 15*l.* per cent. above last year's prices. Potatoes are of superior quality, and have yielded abundantly; yet, in this inland county, little money is brought to the farmer by this article. The same observation may be made with regard to sown grass, there being no permanent market for it when used as hay. This county seems now to have got to the acmè of agricultural improvement, the four-course shift being now the order

of the day; and, to follow it, the farmer is bound neck and heel, with severe penalties in the event of his departure therefrom. However beneficial that course may be in certain cases, where soil and situation combine to render it practicable and profitable, it is highly preposterous to prescribe it to the farmers of a county, sixteen out of twenty of whom are unable to follow such management; as may be evident to every one whose mind is not steeled against conviction, or unacquainted with the local circumstances of the district. But, if conveyancers will insist upon such a course, they ought to begin with changing the position of the buildings, placing dwellinghouses, byres and stables on the top of a hill, and the barn at the bottom, so as it may be practicable to get the dung from the former, and the crop to the latter. If these gentlemen can bring the climate and fertility of China (where it is said stubble is sufficient manure for the soil) to Tweeddale, perhaps such management might improve this county to the hill-top; though, hitherto, any benefit from restrictive clauses has gone into the pockets of the lawyers, without being of any advantage to the proprietors.——25. *Nov.*

Banffshire Quarterly Report.

The rains which broke out about the date of last report, continued for several weeks with little intermission; and, as the greater part of the hay remained in the field, very considerable damage was sustained before it was got into the stack. The cleaning of turnips, from the same cause, was long retarded; but some drier weather being experienced towards the end of August, this operation was at last got pretty well performed. Notwithstanding the wetness of the weather for so long a period, and the great want of sun, the filling and ripening processes went on beyond all expectation. This can only be accounted for by the excessive heat which prevailed for the most part. In short, the crop, which, at one time, had the appearance of being the latest in remembrance, became ready for cutting down about the middle of September.

The stack-yards far exceed their usual bulk; and oats, which are the principal article here, may be rated at a full average, although, in many instances, they will yield a great quantity of light grain. Bear is very deficient in quantity and quality; and, in many of the upper districts of the county, it is unfit for seed or malt. What wheat there is, turns out but poorly; and peas, which are every year less and less sown, are little short of a total failure. Little grain is yet sold, and that only at conditional prices.

The cattle trade ended with high prices; and it may be fairly stated that the grazier has been better paid in this than in many years past. Wintering stock has become very scarce,—two-year old stots in particular; but, as there were a good many parcels of West Highland runts brought over, this deficiency has in some measure been supplied. These, in addition to the fine three and four-year old stots usually found in the lower part of Banffshire, will be worthy of the attention of dealers who may visit this district in the spring months. The weather has continued favourable for the operations of the field, with the exception of two or three days frost

and snow about the 18th instant, which occasioned the housing of cattle. It has again settled; and ploughing goes on, although rather wet in many situations. The price of labour keeps stationary: ploughmen from 7*l.* to 8 guineas in the half year, with maintenance.——28. *Nov.*

Letter from Glasgow, 28th November.

'The progress of harvest work was much retarded by the continued falls of rain during the months of August and September; and, for a time, the prospect of rural affairs was indeed very gloomy; but, about the beginning of October, the weather changed for the better; and, from that to the present time, it has been invariably so fine, as to enable the farmers to secure the whole of their crops in the best condition. The wheat crop in this neighbourhood has undoubtedly come short of an average; and this remark, we believe, is more applicable to the quality than the quantity. Scarcely do we see a fine sample brought to market. Oats, on the contrary, are fully an average crop, both with respect to quantity and quality. This description will also apply to potatoes. The winter wheats have been all sown under the most favourable circumstances; and a larger breadth of ground is occupied by that grain than we ever remember in any past year. The braird too, at present, presents an exceedingly fine appearance.

'The importations from America have fallen far short of our expectations, having received from thence, during the last quarter, only 12,000 quarters wheat, and 10,200 barrels flour. And though we have had considerable arrivals from the North and East of Scotland and England, still the stock of old wheat is comparatively small. Nor, during the present state of things, can we look for any supplies from the States. On all these accounts, it is our opinion that the present high prices will for some time be maintained, unless the quantity brought by the fall ships from Canada be much greater than is expected. Our views with regard to Ireland have been fully realized. The importations thence, since our last, have amounted to 60,000 bolls oats, and 9000 do. oatmeal; and as the crop of oats there, as in other parts, has turned out well, we look forward, with confidence, to an abundant supply of this grain. In this prospect, it is not unlikely that the price may by and by experience some diminution.

State of Glasgow Markets, 28th November.

Dantzic Wheat	55s. to 60s.	p. boll of Linlithgowshire measure.
Foreign Red do.	53s. — 56s.	
New Scotch do.	37s. — 45s.	
Old English do.	54s. — 56s.	
American do.	56s. — 58s.	do. of 240 lib.
Irish do.	48s. — 50s.	
Irish Mealing Oats	26s. — 28s.	do. of 264 lib.
Do. Inferior do.	24s. — 26s.	
Scotch Potato do.	27s. — 28s.	
Do. Small do.	21s. — 25s.	do. Renfrewshire measure.
English Potato do.	28s. — 30s.	do. Stirlingshire do.

English Barley	45s. — 46s.	p. boll, Stirlingshire measure.
Scotch Do.	33s. — 36s.	
English Beans	33s. — 35s.	
Scotch do.	30s. — 32s.	do. do. do.
Scotch Grey Peas	29s. — 30s.	
Scotch Oatmeal	28s. — 29s.	do. of 140 lib.
Irish do.	22s. — 24s.	
Fine Flour	88s. — 90s.	p. sack of 280 lib.

Berwickshire Quarterly Report.

'Fled is the blasted verdure of the fields;
And, shrunk into their beds, the flowery race
Their sunny robes resign.'

From the date of last report (Aug. 2.), to the 11th of September, the weather proved hostile to field operations of every description, and much against the health and maturing of the corn crops. By the middle of August, all the luxuriant fields were lodged, particularly those carrying oats, which were so beat down by the continued rains, that they at last assumed an appearance as if they had been swept over by a flood. Reaping commenced in a partial way about the end of August; but did not become general over the Merse district till the 11th of September, owing to the rain and fogs which prevailed. The succeeding week was fine steady weather; but the remainder of the month was rather unsettled, and occasioned a good deal of extra labour and attention in the business of ingathering. The fields in the low district were, however, mostly cleared by the 24th of October, and, except the sprouting which took place amongst a few early cut fields, the crop in general was secured in good order. Wheat, so far as can be judged from the trials made, will not exceed two thirds of an average crop; the quality extremely various, spring wheats being universally small, and ill filled. Oats proved a weighty crop on all the soft loamy soils; on thin clays they were barely middling. Good oats yield about 8 stones Dutch weight per boll in meal; but a great deal fall considerably short of this weight. Barley is a good crop, both as to quantity and quality. Beans are also a good crop; but peas have failed so completely, that there are few cases where the grain will pay the expense of thrashing. The Lammermuir corn, which had not advanced beyond a green state at the period of the rains, got completely matured by the mild sunny weather in October, and was all carried, in very decent order, by the middle of November, being just a month later than last year. The crop, however, is the best that has been harvested in the hill district for many years past; so that, upon the whole, the grain crops in this county, with the exception of wheat and peas, may be reckoned rather above an average. Reapers' wages, *for the season*, were,—men, from 2s. 8d. to 2s. 10d.; and women, 2s. 6d. per day, with victuals. Turnips are a poor crop upon all the retentive bottomed moorish soils. Upon deep dry loams they are good, having made a considerable growth during the month of October. The best are letting at much the same price as last year, viz. 7*l.* per English

acre. Potatoes are an abundant crop; and young clovers look well; but were severely cut up on wet soils, by the carting of the corn crops. The season was extremely unfavourable for preparing the wheat fallows, few of which have attained a clean state. From the fine weather in October, they were however seeded in pretty good condition; but, from the failure of the crop these two seasons, the breadth of ground sown this year is not so great as usual.

Cattle have been much in demand, with a consequent advance in price. At Dunse fair, on the 17th current, they were fully 20 per cent. above the rates of last year. The number of sheep carried South this autumn was but trifling; notwithstanding which, draught ewes have sold about 12 per cent. higher than last season. Few dinmonts were shown at any of the autumn fairs, a great many having been taken off in the course of the summer, to supply the butcher market.——*Nov. 29th.*

Aberdeenshire Quarterly Report.

The harvest, which commenced unfavourably, turned out better than expected; and, with the exception of a few days in the beginning of October, of snow and stormy winds, whereby some exposed fields of wheat and oats were shaken and beat down, the weather, on the whole, was highly propitious. From the lateness of oats in general, it was not judged fit to hazard or defer the cutting too long; of course, a considerable proportion of them was cut before the grain came to full maturity; and from this cause a considerable part of the grain is light and defective. The crop was gathered, in excellent order, and the stack-yards are uncommonly bulky; and, though the grain yielded from the stack is not so much as usual, yet, on the whole, the quantity will be far above an average. Bear and barley were thin on the ground, and generally inferior, both in quantity and quality, to our usual crops. The same remark is applicable to wheat, (the culture of which is yearly extending); for though many fields of it were excellent, yet, where not fully ripened before the storm in the first of October, the grain is small, shrivelled, and of inferior value. Little grain has as yet been bought for exportation; therefore, prices are very fluctuating.

Turnip, where the seed was good, and the land dry, is in general a full average crop. Potatoes are inferior to last year. Pasture grass continued abundant and plentiful through the season; and the grass seeds sown last spring planted well, being full on the ground, and of promising appearance. Cattle and sheep maintain high prices, having rather advanced since harvest; but fat has not advanced in proportion with lean stock.——*Nov. 29.*

Wigtonshire Quarterly Report.

A fortunate change of weather took place about the 25th of September, and harvest then went on in a pleasant and successful manner. The crops pretty generally stood thin upon the ground, and owing to this the bulk is somewhat defective. On the other hand, this circumstance prevented lodging in an extensive degree; and, notwithstanding the utmost uninterrupted humidity of two entire months, the quality of grain is good. Potatoes are defective in quantity, and turnips are mostly somewhat too late.

The wheat crops having turned out favourably, the price being high, and season for sowing unusually suitable, more extensive trials in the cultivation of this most valuable of grains are now made and making, than is remembered ever before to have been attempted in this district. Should successs crown these endeavours, crop 1810 runs every chance to constitute something like an era in Galloway farming. The superior management required by the successful cultivation of wheat, and the superior profits thereby obtained, cannot fail to produce a happy influence upon rural affairs. Black cattle have been, and still are, very high priced; and live stock of this description are become rather scanty.

What the farmer has chiefly to complain of at present, are, the high price of labour, and the property tax. As to the former he can have very little hope of relief, and is in some measure consoled by the reflection, that it is an indication of national prosperity. There is reason to hope that the latter will shortly be modified.

The unbounded competition which has so long existed amongst farmers, has been the most principal cause of the extravagant advance of rents; and that species of ambition, which is called speculation in ordinary life, naturally urges on to extremes; whence disappointment and confusion as naturally result. Of this the annals of Wigtonshire agriculture afford a recent and conspicuous instance.

A certain memorable land roup, wide famed throughout Britain, has already produced these effects; and, by the severe lesson so given, judgment and caution seem returning to the profession; for rents are absolutely fallen to a very considerable extent; and the extravagant hopes, speeches and schemes of many deluded individuals, are likely to be reduced within the ancient and durable limits of discretion and sound practicability.——*November* 29.

Dumfries-shire Quarterly Report.

The harvest, upon the whole, was a good one in this county, though, in the month of August, it was something retarded by showers and damp weather. Wheat, indeed, where thin and partially broken down, had the fallen heads sprouted on the ground; but this is generally the consequence where wheat is a thin crop. It became so last season in most parts of this county; partly from the extreme frosts in December and January, when the late sown wheat was scarcely above the ground: and whether the imperfect seed from the mildewed crop of the preceding year may not also have tended to the failure in this year's crop, seems doubtful, and deserving the consideration of farmers. Too certain, however, it is, that this year's crop of wheat is a bad one, and much worse than might have been expected from the summer weather in this county; there having been little of any of those morning frosts and chilling fogs which are understood to occasion blight and mildew. The spring wheat, of the awned red kind, said to be from Lincolnshire, sown here last April, appears to be better filled than the winter wheat has generally been. If it gives a fair produce, it will probably increase the growth of wheat, and encroach upon the barley. This may have no bad effect while spirits are distilled from West India pro-

duce; but whether it will benefit the farmer, and of course the landlord, seems more doubtful. Oats and barley are both average crops; oats, more particularly, good in the upper parts of the county. Turnips have improved greatly in size; and are a good crop, where they had not failed early by the drought or fly; but such failure took place in at least one-third of the county. From the excelcent quality of turnips, owing to the fine autumn weather, they are this year good food for horses, and particularly useful with straw. In wet autumns and winters, the horse will not eat common turnip, but likes at all times the Swedish kind.

This has been a good year for the breeders of cattle and sheep; both from the advance of price and the numbers produced. It is however complained by the sheep-feeder, that none of the upland farms had their proper stock, or number of ewes, owing to the failure of the two former years; and it is believed, that the advantages of this season will be far short in making up the losses of these years. The present scarcity of meat at the shambles, and high price of animal food, is well accounted for by the loss of ewes in the two former years, and the short produce of those that lived. In each of these years, one-fourth of an average produce of sheep, supposed to be wanting, must affect, in a striking degree, the market, when that produce at maturity should come into it. Thus it was, that the extreme scarcity of the years 1799 and 1800 was not made up for four years thereafter, notwithstanding the good seasons that followed.

Cattle have increased in price since the spring, paying well the breeder, dealer, and grazier; but the present holder of stock, recently bought in, runs a risk of being ill paid. Such chances the farmer must run. Beef, at present, is from 7s. to 8s. the stone, avoirdupois; and mutton nearly the same.——*30th November.*

Ross-shire Quarterly Report.

Circumstances have been more favourable for farmers in the north of Scotland, this year, than for several years past. Live stock have uniformly sold well from spring up to the present day; and, from the scanty supply of good beasts at the late markets, it may be safely inferred that cattle are a scarce article. Besides the advantageous disposal of this staple article, corn crops have been secured in excellent condition. Harvest commenced generally about the 12th of September, and was mostly over in October; during that period the weather was occasionally soft and moist, threatening damage, but always cleared up before any took place; and rather seemed useful, as tending to keep alive a spirit of diligent activity, valuable at all times, but particularly so at that important period. Several fallow fields were sown with wheat in September, which now look remarkably well. The wheat seed was finished in October, in the finest order; and a continuation of the fresh weather till the 15th current has produced an ample braird. Principally owing to the thinness of several fields, the wheat of last crop is not expected to yield an average produce, nor are the finest samples accounted quite so good as the best of last year's; at the same time, there being

a greater uniformity in the quality, the aggregate will be better. Barley and oats are fair crops, and of good quality; the latter particularly so, and exceeding an average. Potatoes, good and abundant, were secured, before any frost came to injure them. Turnips, benefited by the softness of the weather in Autumn, are a weighty crop; and similar causes have forwarded the progress of stock, consuming them, in a corresponding degree. As to the improvements of the county, it may be announced, that the bridge of Conan is now completed; and that several lines of road, partly on the great line from north to south, and others for internal convenience, are in progress. There has been a rise of fully 30 *per cent.* on the rent of arable lands within the last two years; which may be principally attributed to strangers coming from the more opulent districts in the south. Very few obtain beyond a 19 or 21 years' lease. The advantages of entry are by no means so favourable as in the south; but these are expected to be overbalanced by the low rate of labour and rents. Every one connected with agriculture must rejoice to see it thrive; and none will be more sincerely happy, that the expectations of enterprising men do not meet with disappointment, than the writer of this report.——30*th November.*

Letter from Langholm, 1st Dec.

'During the last quarter we have experienced a great proportion of mild weather. The early part of harvest was moist; but some fine days intervening during the course, and toward the latter end of autumn, harvest work was finished in a better style than what the beginning of the season had promised. The crops of grain have, in general, turned out more abundant, and of a better quality, than what was once expected, and may, in this district, be estimated as a fair average. Hay, from natural grown grass, was ill got, in most cases, therefore inferior in quality. Potatoes yielded a plentiful return, and are of excellent quality. Turnips, from the singular mildness of the season, improved greatly during the months of September and October; and many fields at present exhibit the appearance of a decent crop, which were considered, at an earlier stage, as good for nothing.

'Black cattle have brought extravagantly high prices of late, and so have sheep; though the markets for lean stock, in Yorkshire, have been dull for some time past; owing, probably, to the great numbers of sheep carried southward this season, and the long prices demanded by the sellers. Ploughing, and other field work, preparatory to the green-crop husbandry of next season, is far advanced, and executed while the soil was in the most favourable condition.'

Letter from Falkirk, Dec. 2.

'It is a moſt pleaſing and grateful taſk to be able to report the happy concluſion of a harveſt, the commencement of which was gloomy and diſheartening in the extreme, and, indeed, threatened the moſt extenſive miſchief. We had certainly reached the very verge of one of the greateſt calamities that can well occur in a populous country,—a damaged crop. A very few days longer continuance of the moiſt, cloſe, foggy weather, that prevailed in the early part of harveſt, muſt

have been followed by the moſt diſmal conſequences. Happily, that Power, which manages events with unerring wiſdom and benevolent deſign, willed it otherwiſe; and the damage incurred has neither proved very general nor very conſiderable. It has been confined chiefly to ſome partial ſpringing of wheat, of no great conſequence. With the exception of wheat, from the circumſtances juſt mentioned, and from its having been, throughout the whole ſeaſon, thin on the ground, we have certainly obtained, in this diſtrict, a full average crop. Oats are probably above that ſtandard, yielding well on the barn floor, and plentifully at the mill. Potatoes are both abundant and excellent. There is alſo plenty of fodder, which has hitherto been almoſt entirely ſaved, from the long continued mild weather both allowing the cattle to continue out, and ſupplying them plentifully with food. There is, therefore, the comfortable proſpect of plenty in the land for man and beaſt. Notwithſtanding this plenty, however, which, it is hoped, may be alſo the caſe in other diſtricts, it would be highly unreaſonable to expect, that the produce of the land ſhould be obtained for any thing like what may be conceived to be old prices. If even theatric, and other amuſements, with ſuperfluous bagatelles of every deſcription, are not, now-a-days, to be got on former terms; to expect that the more ſubſtantial and indiſpenſable articles of firſt neceſſity ſhould be had at old prices, can only lead to diſappointment and diſcontent. Under exiſting circumſtances, prices muſt neceſſarily continue to advance comparatively; and the public ſhould lay their account with this unavoidable occurrence. What change, indeed, peace might bring about, is another queſtion; but, until that can be more certainly aſcertained, a progreſſive advance muſt be endured; and it can anſwer no good end, or uſeful purpoſe, to endeavour to keep this moſt probable occurrence out of ſight.'

Forfarſhire Quarterly Report.

THE harveſt in this county began, on early farms, about the firſt week of September; and, for two weeks about that time, the weather was particularly unfavourable to the crops. The atmoſphere was quite cloſe, and rain fell in conſiderable quantities every day; in conſequence, the crops were lodged, and, in many ſituations, much ſprouted. The wheats alſo ſuffered from mildew, on light lands, as laſt year; and, had not clear, windy weather ſprung up, the proſpect of the country would have been truly alarming. From what has been thraſhed of the crop, little can be ſaid in its favour. Wheat is found to be fully worſe than laſt year,—the bread made from it of bad quality. Barley turns out ill from the bulk; and oats are very deficient in meal; from 11 to 14 pecks are common returns for a boll. Potatoes are a good crop on dry ſoils; and turnips have improved conſiderably.

Cattle markets have been riſing gradually this quarter, and are fully higher at this time than at any former period. Fat is very ſcarce, and high prices are expected for the feeding ſtock. Grain markets ſet off briſkly in the beginning; but are now dull, and prices reduced. Good wheat brings from 45s. to 50s.; but it is a ſcarce article. Barley 27s. to 30s.: Oats 25s. to 30s. per boll.

The wheat in this county, being moſtly ſown after fallow, was put into the ground in a favourable way, except on very wet ſoils; and the

ſoft weather has brought it as forward as is wiſhed before winter. The quantity ſown is fully as great as formerly, notwithſtanding of the failure for theſe two years. Field-labour is alſo well advanced. Land-rent riſes faſt. A good farm cannot be got much under 5l. per acre; and inferior ſoils are ſtill reckoned comparatively dearer.——*Dec.* 2.

East-Lothian Quarterly Report.

THOUGH the autumn quarter was unfriendly to rural buſineſs, yet, on the whole, the proceſſes of cutting, winning and gathering the crop, were ultimately better executed than could have been expected, conſidering the melancholy and diſtreſſing circumſtances under which harveſt-work was undertaken. At the commencement, exceſſive rains, followed by ſultry and foggy weather, were experienced for many days: hence, moſt of the winter wheats got into a ſprouted ſtate, even though they were not cut; and, generally ſpeaking, they are in worſe condition than known in any year, that of 1799 excepted. The ſpring-ſown wheats, however, almoſt entirely eſcaped any injury of that nature; though, from a want of ſunſhine when filling and ripening, they are light and unproductive. Taking the wheat crop as a whole, the deficiency will be greater as to quantity, and much more as to quality, than laſt year. From numerous trials made, there is reaſon to believe, that the average return of this county will not exceed ſix bolls, or twenty-four buſhels, per Scotch acre; and even that return will yield far leſs of the perfect article (flour) than was obtained laſt year; whilſt the quality of the flour will be vaſtly inferior, and, of courſe, of ſmaller benefit to the conſumer.

The other grains, peas excepted, are conſidered as fair crops. Perhaps oats may exceed an ordinary average; this grain being conſtitutionally diſpoſed to reſiſt exceſſive moiſture better than wheat and barley. A very ſmall quantity of any grain, however, is in good condition, particularly wheat, which probably will not get into a firm or grindable ſtate till the ſpring ſeaſon. On this account, a regular demand in the market is not to be expected for ſeveral months. Indeed, wholeſale purchaſers have ſcarcely yet appeared for any ſort of grain; therefore, nearly the whole of what has been thraſhed is preſented in the public market, where ſales are irregular, and prices conſtantly fluctuating.

Turnips and other eſculents are greatly below common averages, though, perhaps, their value per acre is not thereby much diminiſhed. The growers of them have a decided ſuperiority over the growers of grain in adverſe years; becauſe none of the former articles will bear the expenſe of importation from other countries; conſequently, a ſcarce year ſerves to enhance their value conſiderably; whereas, with regard to grain, its market value is only regulated, to a certain extent, by the goodneſs or badneſs of the home crop, as ſupplies may eaſily be obtained from other countries. The grower of grain, therefore, ſuffers in every bad year, having then only a ſmall quantity to ſell; and makes moſt money in a favourable ſeaſon, when he had a greater quantity to diſpoſe of; whilſt, at the ſame time, leſs temptation prevails to make foreign importations.

In a pamphlet lately publiſhed on the Property-tax, by a gentleman in Edinburgh, it is ſtated, in ſupport of the argument maintained, that

'*the wages of farm-servants, and consequently expenses, are on the decline;*' and a reference is made to the report from this county in the Magazine for June last. Upon examining that report, it appears that the words used are the following ones. '*Labour is not advancing in value, as was evident at the Dunbar hiring market on Tuesday last, where many servants were not engaged.*' Any observations on the above are unnecessary: these may be left to the reader. —*Dec.* 4.

ENGLAND.

Extract of a Letter from a Scotch Farmer to his Friend near Edinburgh, giving an account of the state of Husbandry in one of the districts of England.

'The agricultural implements in this country, are generally the most absurd nature could suggest. The neighbouring farmers are much astonished at seeing a plough going without a wheel to keep it out of the ground; and still more so, because it is drawn by two horses.—The farmers generally plough with four horses, or six oxen, though the furrow is not above two inches by five.

'Agriculture here, in all its branches, is about a century behind what it is in Scotland. The people have much of a natural prejudice against improvement; though I must own the tithing disheartens them very much, as a tenth of the crop, or one-fifth of the farm, must be given to the tythe holder, &c. &c.—The country is mostly hill and dale;—all ploughable, though two-thirds of it is pasture. The country is very fertile. Fruit-trees in abundance. Wheat is the principal crop. We live here a great deal more extravagantly than in Scotland. Drinking cyder in place of ale, &c. &c.'

Letter from a Suffolk Farmer, October 8.

'The harvest with us has been long and tedious: such an abundance of rain, and so little sun, that the earth was always cold. Our wheats, I think, are got in worse than any other grain; the article being so essential to the comfort of the community at large, the anxiety of those who grew it, was too great, at the beginning of harvest, to let it stand a proper time before they *barned* it; therefore much was carried in a cold or damp state. This, I flatter myself, is one reason of the late high rise of price at Mark-Lane; for the millers with us cannot grind the new wheats without a mixture of old. The samples appear much more handsome than last year; but I think the quantity will prove short one-fourth of that year's produce; and, if the harvest in the North should fail, and the ports of America continue shut, we shall be much distressed. Flour, now, is 4s. 11d. *per* stone; and great discontent is visible among the lower orders with us; they never yet having been compelled to eat much barley or oat bread. Barley, upon the light lands, is a very poor crop; yet upon the better soils, I think will do well, though very deficient of quantity from last year. Oats, as well as beans and peas, will certainly be a full crop. The Scotchmen are asking such enormous prices for the cattle they bring up, that many of my neighbours, who are large graziers, are determined to set their faces against it, and will purchase none; for what turnips we have can

very well be fed by the quantity of sheep and lambs we now hold. The wet has much affected that root, by giving it too much top, and too little bottom; the latter of which is greatly hurt by the maggot; and, if a sharp winter should succeed this wet summer, they never can stand the frost. All our second crops of clover, or nearly so, are spoiled by the wet weather. Such is our situation here; and, if you were to make inquiry, I have no doubt but you would find it nearly the same in most parts of the county.'

Extract of another Letter from the same Gentleman, Nov. 3.

'I HAVE but little to add to my last communication respecting agricultural matters in this part of the country, except that I am sorry to learn that red clover seed fails throughout the whole county, and will not turn out above half a crop; and, from the dearness of that article last spring, it is probable there is but little old stock left. I was favoured with the perusal of a letter yesterday, from Hamburgh, complaining of a similar deficiency throughout Holland. The price, of course, will be enormously dear. Since the potato harvest commenced, they are found to rise very deficient in size from what was expected. One of my neighbours, who had calculated on 150 sacks *p.* English acre, has got less than 100. We have had, for this last month, very dry weather, which has wonderfully improved the turnip. The top has ceased to run; and the apple is of very good size. Wheat-planting commenced very early; and, upon the light, mixed soils, never planted better, nor appeared more luxuriantly; but, on the stronger soils, where it was planted later, there will be a deficiency: for, from the coarseness and bad working of the land from the dry weather, the grain has never vegetated; and many lands of this description, as soon as rain shall come, must be planted over again. Brank or buck-wheat with us was never better harvested; and has every appearance of a full crop.

I send you a statement of our prices, which will enable you to draw a comparison between them and those in the North.—Prices at Ipswich market last Saturday.—Wheat, 110s. *p.* qr.—Barley, 50s.—Beans, 54s.—Oats, 36s.—White Peas, 84s.—Grey do. 52s.—Oil cakes, 16*l.* to 16*l.* 16s. *p.* 1000.—Good Beef and Mutton, 8d., 8½d., and 9d. *p.* lib.

Norfolk Quarterly Report.

A MORE tedious season for harvesting the crop has not been remembered for many years, than was experienced in the present one; and less fine weather for harvest-work was never known, than in the months of August and September last. The first part of the wheat crop was therefore harvested very indifferently; but the middle and latter parts met with a little better fate, being got in tolerably dry. The produce appears to be short of that of last year by full one-sixth, though the quality is considered to be better. What has been brought to market is damp and raw, and not fit to be manufactured, without the assistance of old, dry grain. With regard to the barley crop, the produce, upon a general scale, was never more abundant; but the harvest for that, as well as for the wheat crop, was very unkind. It is calculated that two-thirds were imperfectly got. Indeed,

grain comes to market in so bad a state, that, in many instances, the inferior sorts cannot be sold; being wet, mouldy, and heated.—The Pea crop was of small breadth;—still, it is considered a good one in point of produce, and better got than any other part of the crop in this county. Oats are a short crop; chiefly owing to the inundated state of the Fens at seed-time. Turnips vary this year. On good deep soils they are a fine crop; but, on high, *corky* soils, they are quite the reverse. From the almost general use of thrashing machines, corn markets, since the conclusion of harvest, have been liberally supplied with grain. Barley began at a high figure; but has been gradually declining in price for these three last weeks. At Lynn (the great corn market of this county), barley sold lately as high as 52s. *p.* qr.; though, at the present time, the finest runs are not worth more than 44s. Scotch cattle are selling here as high as 7s. 6d. *p.* stone.—Stock sheep, 20 *p. cent.* higher than last year. Wool, of fine quality, is selling for 90s. *p.* todd of 28 lib. Wheat-sowing is nearly finished.—The early planted fields never looked better than at this period.—*Nov.* 16.

Sussex Quarterly Report.

The harvest, owing to the long continuance of wet weather, was of unusual duration. The wheat crop, however, with those endowed with that necessary quality, patience, was very little injured, and much less grown than could possibly have been expected; but proves by no means equal to that of last year in quantity. The samples are good, where not injured by the smut, which is much complained of. In the opinion of one of our largest millers, which, perhaps, is to be received with caution, though at the same time a large farmer, there is a deficiency of at least a fifth; and the quantity that has come to market this year in comparison with last, justifies this opinion. Oats are good; Peas remarkably so; and, as to Barley, there is none grown hereabouts, but upon the Downs and light soils: the crop of this grain is a full average. The soil in this neighbourhood is well adapted for Beans: but they are seldom sown, and then broadcasted; and, as they receive no subsequent attention, of course do considerable injury to the lands. The general routine is fallow, wheat, oats, seeds; in some few instances fallow, wheat, peas, wheat, oats, seeds. The price of land is rising. A few years ago ten shillings an acre was considered a good rent; but now, the same lands let for double that sum. I am speaking of the arable land. Grass grounds near towns let very high; but more from accommodation than from intrinsic goodness. There is one circumstance which, however beneficial to landlords, must always operate as a great drawback to high rents, viz. that in the weald of Sussex, the enclosures are small, and generally surrounded with wide hedge-rows, wherein there is much oak timber, which intercepts the benefit of the sun, and robs the head-lands to a considerable extent. Though more activity and skill is displayed by the farmers in general, within these few years, yet they are still very far behind hand; there not being three ploughs with a pair of horses, nor a thrashing machine within many

miles of this place. The long continuance of fine weather, which began with October, has permitted the wheat-sowing to be effected at an earlier period, and in a better and more expeditious manner than has been remembered for many years: the young wheats are come up well. The same cause has been very beneficial to the feeding stock on grass grounds, and tended to keep up the price of lean stock, which is dearer than last year by perhaps 20 *per cent.* Hogs scarce; and, of course, high-priced. Being so near London, our markets are governed by those of the metropolis;—it therefore is not necessary to add the particulars. South Down wool, of the best quality, is 5*l. p.* todd of 32 lib.:—some has fetch'd 5*l.* 5*s.* There is a great inclination to cross with the Merino; and I have little doubt but, in a very few years, there will scarcely be a flock without a stain of that breed. The wet weather in September prevented the growth of the turnips on the stronger soils; and, generally speaking, they are not an even crop, though they have come on lately. Labour is about two shillings a-day in winter; two and sixpence in summer.—Thrashing wheat, four to five shillings a quarter.—A carter receives 12*s.* or 13*s.* *per* week, with house rent, and an allowance for the harvest month.

Letter from a Farmer near Wakefield, 25th November.

'Our harveſt commenced in a partial way about the 21ſt of Auguſt; and a ſmall portion of wheat and early oats were carried in the following week, which is ſound and good. But, on the 1ſt of September, the weather turned wet, and we had ſcarce a day and night without rain during the whole month. I have managed farm land for forty years, and do not recollect ever getting my corn ſo tender and unmarketable. I have known it more ſprouted, but never in ſuch bad condition for grinding. We waited day after day for more favourable weather, till our patience was quite exhauſted; and this, with the mildew, which (though not ſo general as laſt year) was in many places very fatal, makes the ſamples of wheat, as well as barley, very ordinary indeed. Much of the wheat will not grind without kiln-drying; and the barley malts very unkindly. It was ſo repeatedly wet, and half dried again, that the vegetative powers ſeem deſtroyed. In conſequence of this, the little corn that was got, in condition, of both ſorts, fetches a very high price. Barley is a large and productive crop; but there is much of it that is only fit for hogs and horſes. Wheat yields better under the flail than laſt year; but, being both tender and unſound, great waſte is committed both in grinding and uſing. Upon the whole, I think we are in a worſe ſituation than laſt year. Beans were a good crop, and tolerably well harveſted. Oats, though not ſtrong upon the ground, are tolerably productive, and ſuffered leſs from the weather than any other grain. Our wheat ſeed-time has been pretty favourable, the ſeed being got into the ground in good order: not much remains unſown, except where turnips are cultivated. The turnip crop in this circuit is extremely good; and great abundance of latter graſs alſo. Lean ſtock of every ſort maintains high prices. Fat cattle alſo ſell well. Good beef 8*s.* per ſtone of 14 lib. ſink offal.—Mutton 7½*d.* to 8*d.* per lib. do.—Lean cattle 30 *per cent.* higher than laſt year.

State of London Markets, Monday, November 27th.

Red Wheat	85s. to 100s.	Fine Flour	90s. to 95s. p. ſack.
White do.	94s. to 112s.	Second do.	85s. to 90s. p. do.
Rye	52s. to 55s.	American do.	60s. to 64s. p. barrel.
Barley	38s. to 54s.	Kidney Potatoes	110s. p. ton.
Malt	68s. to 86s.	Champion do.	70s. to 100s. p. do.
Feed Oats	28s. to 34s.	Ox Nobles	65s. to 80s. p. do.
Poland do.	32s. to 39s.	Hay	100s. to 120s. p. load.
Potato do.	36s. to 41s.	Straw	40s. to 44s. p. do.
Horſe Beans	40s. to 46s.	Fat Cattle	4s. to 5s. p. ſtone of 8 lib.
Pigeon do.	49s. to 50s.	Sheep	4s. 4d. to 5s. 6d. p. do.
Tares	40s. to 48s.	Tallow	5s. 2d. p. do.
Grey Peas	58s. to 62s.	Clover Seed (Red)	62s. to 114s. p. cwt.
Boiling do.	72s. to 86s.	Foreign do.	58s. to 118s.
—All per quarter of eight Winchester buſhels.		White do.	70s. to 120s.
		Trefoil	20s. to 30s.
		Oil Cakes, 16 guineas p. thouſand.	

Northumberland Quarterly Report.

THE fine weather we had in the latter end of July, terminated on the 30th of that month, when wetneſs ſet in, and continued, with few intervals of fair, until nearly the middle of October; from thence, for about three weeks, there was little rain, which allowed a conſiderable portion of ſummer-fallows to be ſown with wheat. The greateſt part of November has been wet; and, on the 17th and 18th, a violent ſtorm of driving ſnow, in many places three or four feet deep, which continued on the ground nearly a week. Since then we have had almoſt daily rain; and, taking it altogether, from the 30th July to the 30th November, probably this was the wetteſt ſeaſon that can be remembered. The conſequences are, that the fallows for wheat are generally in a bad ſtate, and a great portion of them remain unſown. Turnips upon ſtrong loams, or ſoils the leaſt inclined to moiſture, are very bad: thoſe upon dry fertile loams are a full crop; but the bulbs have not attained that ſize they would have done, had the weather been warmer. On the whole, turnips, in this diſtrict, cannot be eſtimated at more than half a crop; and, of courſe, the prices were expected to be high. Some were ſold at 10l. an acre at the beginning of the ſeaſon; but they are now lowered to 6l. and 7l., owing to the great demand for ſtock to the ſouthward, which has been ſuch, that many people have ſold their ſheep, who uſed to turnip them through the winter. The wheat crop, which had ſo promiſing an appearance the latter end of July, has greatly diſappointed the hopes then entertained. On the 6th of Auguſt, ſmall flies on the ears, and yellow maggots in the bottom of the huſks, deſtroying the germ, were firſt obſerved. Soon after this, the ruſt or fungus on the ſtraw took place, though not ſo generally as in the year preceding; and, to increaſe the calamity, the wet harveſt occaſioned much of the grain to be ſprouted. Even thoſe crops which eſcaped the ruſt, when they come to be thraſhed, produce very inferior ſamples, and much fewer buſhels per acre than what were expected. The deficiency in quantity is probably owing to the ravages of the yellow maggot; and the ſhrivelled ſtate of the grain to a want of ſun for bringing it to perfection. Barley and oats, eſpecially upon dry ſoils, are abundant crops. Peas and beans quite the contrary. Potatoes, in general, are inferior in quality, and deficient in produce. The prices for fat

ſtock have remained much the ſame as ſtated in laſt report; but, from the great quantity of ſtock that has gone out of the country, an advanced price is expected to take place very ſoon, and to continue through the winter.——*30th November.*

Eſſex Quarterly Report.

The obſervations made of the production of wheat this year, lead to the concluſion, that the crop of that grain is one fifth ſhort of the ordinary average; but the quality is very good, and, conſidering the uncertain weather, it was well harveſted. Barley is likewiſe rather deficient, and the quality by no means good, even where well got up, whilſt the full half is conſiderably injured by the continued rains during harveſt. Good barley is ſcarce; therefore, the malting trade is not carried on with the ſame ſpirit as laſt year. Oats are an abundant crop, and the quality in general good. Rye, about harveſt time, was conſidered injured by a blight; but it proves to be very good, with a fair production. Peas and tares are rather ſhort, few being ſown laſt year. Beans are more plentiful, but very badly harveſted. Clover ſeed is deficient, and the quality not good. Hay is ſcarce; conſequently, that which is good, fetches a high price. Potatoes have riſen plentifully, and are cheap in proportion to grain. In turnips, there are but few failures; and the openneſs of the ſeaſon hath allowed the graziers to make a reſerve of them. The plant of wheat is not very promiſing, the ſeed-time being very dry, which prevented the ſowing of it till late; that which was ſown early, has a much better appearance. Rye and winter tares look well. Stock of every deſcription is dear.——*30th November.*

Yorkſhire Quarterly Report.

From the long continued rains during harveſt, and particularly from the hurricane of the 27th of September, much loſs and damage were experienced in the crops of almoſt every ſpecies of grain; and little of any ſort was eventually well ſecured in many places: conſequently, much appears very damp and ſoft when preſented at market; and, before next midſummer, it will be felt that the ſupply has been much affected by theſe unfavourable circumſtances. In other reſpects, moſt of the produce would have been fully as abundant as uſual, perhaps more ſo. Barley is now ſelling at all prices, from 5s. to 8s. per buſhel. Wheat, from 10s. to 15s.; Rye, 8s.; Oats, 4s. 6d.; and Beans, 9s.

The ſtate of the weather has alſo been unfavourable to the ſowing of wheat, little of which was well done, and little appears above ground, even of that which was ſown a month ſince, occaſioned by the occurrence of ſevere froſts immediately after ſowing. Some of the bean ſtubbles and clover leas remain over for ſpring ſowing with oats, &c. in lieu of wheat, from the juſt dread of that great diſcouragement to the growth of wheat, the mildew. Fat and lean ſtock of all kinds are uncommonly high for the time of the year; and great prices are given for turnips: ſome are ſold at from 6l. to 8l. per acre, to be eaten on the ground with ſheep. Aftergraſs was abundant; and good hay is about 4s. 10d. per ton. Wool is better ſold than laſt year. Flax is lower than for ſome time paſt. The ſeeds of clover, &c. ſown laſt ſpring, have planted remarkably well. Good horſes are ſtill ſelling at very high prices; the continuance of which may in ſome degree account for the

apparent ſcarcity of horned cattle; as many farmers have bred foals inſtead of calves, for ſome years paſt.

The ſtock of malt is ſaid to be very trifling; and very little old wheat or grain of any ſort is ſuppoſed to be on hand. Potatoes have turned out one of the beſt crops ever known; and they are ſelling at a very low price. Beſt beef, mutton, veal, and pork, are about 8d per lib.; Butter, 1s. 6d.; common cheeſe, 9d. per lib. avoirdupois weight. Fat and lean hogs, of all ſorts, are extremely dear.

Notice concerning Merino Sheep.

All perſons who poſſeſs ewes of the pure Merino race, and are deſirous of increaſing their ſtock, are requeſted to apply to Sir Joseph Banks, who has received the King's commands to diſtribute a conſiderable flock, newly imported from Spain, among ſuch perſons as are moſt likely to preſerve them free from all admixture, and to improve their form by judiciouſly matching them in breeding; giving a due preference to thoſe who have manifeſted their approbation of this kind of ſtock, by having already provided themſelves with the breed, but who have not yet obtained a ſufficient increaſe to be able to ſupply the wants of their neighbours who wiſh to improve their Britiſh wools by the uſe of this valuable croſs.

Letters addreſſed to Sir Joseph Banks, Soho-Square, London, will be duly attended to. He requeſts to be correctly informed of the actual number of pure Merino ewes, ewe teggs, and ewe lambs, each applicant is now in poſſeſſion of, and of the ſource from whence the breed was originally procured.

Sir Joseph Banks will be thankful to gentlemen who will inform him what was the average weight of their pure Merino fleeces of the clips of 1808 and 1809, and what price per pound they were ſold for, with the name of the purchaſer.

POSTSCRIPT TO FIRST BRANCH.

QUERIES.

Whether is it moſt advantageous, on entering to a farm quite run out and dirty, to make at once a great exertion to improve it, or to do this gradually, eating the natural growth of the unimproved parts with ſheep? And, whether would this ſcheme of gradual improvement be moſt ſuited to land adapted to the turnip huſbandry, or to a clay farm?

Let both be ſuppoſed capable of carrying *plenty of natural graſs*, and that lime can be obtained at 4s. 6d. per boll, barley meaſure, carriage and every other expenſe included.

OBITUARY.

[The following article, for this branch, has been ſent us from Fifeſhire; and we have inſerted it without the ſlightest alteration, except ſome of a verbal kind, truſting that the author has given a correct account of his deceaſed friend.]

TO THE CONDUCTOR OF THE FARMER'S MAGAZINE.

Sir,—When we examine the periodical liſts of fame, we often find names enrolled there, and celebrated as great, for no other reaſon,

that one can conceive, than that they do, or have done, great mischief; while, when we look through mankind, we see characters of real intrinsic worth, whose benevolent and humane dispositions diffuse happiness all around them; honoured, indeed, and beloved by their friends and dependants, but making their final exit without one mark of public approbation. The FARMER'S MAGAZINE is certainly exempt from the above charge, as a page has now and then been most judiciously devoted to honour the memory of some characters, which, although they may not have shone among the din of arms, have conducted the plough through the stubborn soil—driven the opposing drain through the stagnating marsh—and covered the barren heath with luxuriant crops of yellow grain. Encouraged by these examples, I herewith send you a few observations on the character of the late Mr ALEXANDER HENDERSON, farmer at Methel Hill.

Mr HENDERSON, who died at Methel Hill on the 13th of August, was in perfectly good health the night before his death; and, by five next morning, was carried off by a fit of apoplexy. Humanity cannot refrain from dropping a tear over the memory of this good man, who was placed in easy and affluent circumstances of life, and lately married to a lady of the most respectable character and connexions. Farming extensively under an indulgent landlord, who but last year lengthened his lease to twenty-one years on advantageous terms; and, carrying on his improvements with spirit and enterprize, every thing apparently bade fair for prosperity and length of days—when, lo, in one moment, every fond hope was laid prostrate in the dust.

Mr HENDERSON'S mental powers were certainly not above mediocrity; and, from his taciturnity in company, some people were disposed to rank them below that mark: the fact rather was, that Mr HENDERSON had not that facility in communicating his ideas that is peculiar to some men; but, that his ideas were perfectly correct on agricultural matters, the extensive, beautifully cultivated fields of Methel Hill sufficiently prove. The prominent features of his character as a farmer, was patience and perseverance, under the most difficult, laborious and expensive undertakings; and these qualities of mind were exhibited in the vast sums he expended in accommodating himself with an extensive and elegant steading; in levelling, draining, and liberal application of manures, of which his situation gave him an uncommon command. But every effort of his understanding, whether applied to agriculture or any other subject, was far surpassed by the benevolent dispositions of his heart;—and here, indeed, did the intrinsic value of his character consist. Situated as he was in the midst of a populous neighbourhood, every day presented opportunities for the gratification of these generous dispositions; nor did he let these opportunities slip—for no man in his situation and circumstances has been known in this place of the country to give away with a more liberal hand than Mr HENDERSON did: Numbers were almost wholly dependent on his bounty; and numbers more, experienced his assistance in the trying time of need. When winter's stormy blast drove with unrelenting fury, and carried cold and starvation into the bleak abodes of poverty, his horses and

carts were ever ready to drive fuel for the relief of the indigent; and, in times of dearth and scarcity, his barns and granaries were opened liberally for the relief of man and beast. If any error attached to this part of Mr HENDERSON's character, it was this, that he did not in every instance make a proper selection of the objects of his charity; but here his very failings leaned to the side of virtue: and although, in some cases, his goodness might be misapplied, in many more it relieved the real needy, and eased or removed that additional portion of distress which poverty but too often adds to the sum of human misery. These facts were strongly corroborated, and expressed in more pointed and emphatic language than can be done by the writer's pen, in the lamentations, the tears and melancholy looks of a vast train of his dependants, who followed his remains to the grave. In fact, it may be justly said of him, that he 'lived beloved, and died regretted;' for in him was united both the will and the power to do good: and the pleasure he must have felt from supplying the wants of others—from relieving distress, and diffusing happiness amongst so many of his fellow creatures, cannot easily be described; and can only be enjoyed by souls endowed with the same godlike dispositions.

The above is a just description of the most striking features of Mr HENDERSON's character;—a character which cannot be deemed unworthy of notice, as it holds out an example of benevolence and generosity worthy of imitation; and, to every person in like circumstances, says, in the most energetic language, *Go, and do likewise.*

NOTICES TO CORRESPONDENTS.

The letter from our worthy friend GEORGE DEMPSTER Esq., with his *Essay on Sheep Farming in the Highlands of Scotland*, will, without fail, be presented to our readers in next Number; as also the letter of R. N. S. concerning the paying of rent in grain.

We are extremely sorry that the *President's Report to the Workington Agricultural Society*, did not reach us till this Number was at press; but we will endeavour to make ample use of it in our next publication.

An Account of a New Method of Planting Hedges, is received, which the CONDUCTOR thinks well of. Various papers respecting the expense of making Enclosures, are also received.

We regret that the Quarterly Reports from Wales, Lancashire, Cumberland, Mid-Lothian, Fife, Moray, and Inverness, with our London Letter, came too late to hand for insertion, especially as they contain much valuable intelligence.

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